PILOT PROGRAM CONSULTING GROUP

1995 INTERIM REPORT

Prepared for:

The Deputy Under Secretary of Defense (Acquisition Reform)

FOREWORD

This report documents the progress and results of the Defense Acquisition Pilot Programs in implementing innovative commercial acquisition approaches, consistent with the provisions of the Federal Acquisition Streamlining Act of 1994. The report was prepared by the Pilot Program Consulting Group on Metrics (PPCG) composed of members from the Office of the Deputy Under Secretary of Defense for Acquisition Reform, the DoD Comptroller, the DoD Inspector General, the Defense Contract Audit Agency, the Defense Contract Management Command, the Defense Systems Management College, an independent consultant, and the Component Services. The PPCG was chartered by the Deputy Under Secretary of Defense for Acquisition Reform to assist the DAPP program managers in evaluating and reporting the effects and results of innovative commercial acquisition approaches.

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EXECUTIVE SUMMARY

The Defense Acquisition Pilot Programs (DAPPs) are an integral component of the Department of Defense's (DoD's) approach to reform the acquisition process. Each DAPP is specifically charged by the Under Secretary of Defense for Acquisition and Technology (USD(A&T)) to demonstrate new and innovative approaches in the use of commercial practices and the acquisition of commercial products. To explore innovative approaches, the DAPPs were afforded regulatory and statutory relief under the authority granted by the Federal Acquisition Streamlining Act of 1994 (FASA '94) and the FY95 National Defense Authorization Act. USD(A&T) designated the following programs as statutory DAPPs on 15 December 1994:

- Joint Direct Attack Munition (JDAM)
- Fire Support Combined Arms Tactical Trainer (FSCATT)
- Joint Primary Aircraft Training System (JPATS)
- Commercial Derivative Engine (CDE)
- Commercial Derivative Aircraft (CDA)/Non-Developmental Airlift Aircraft (NDAA).

The above programs realized substantial progress in program evolution and acquisition reform during 1995. Results to date, as reported by the statutory DAPPs, show that acquisition reform contributes to reduced contract costs, improved development and delivery schedules, and substantial gains in in-house efficiencies. Furthermore, these results appear to apply across a wide-range of DoD weapon systems. Some of the reported results are quite substantial, including:

- ***JDAM projects a total program cost reduction of $2.9 billion which includes a unit cost savings of over 50 percent, an expected production cost avoidance of $2.7 billion (then-year dollars across 74,600 units) and a development cost savings of $200 million. JDAM also reports a 34 percent improvement in development time***
- ***FSCATT reports a 30 percent reduction in in-house costs associated with Request For Proposal (RFP) preparation and***

source selection and projects a 13.5 percent savings in development and production contract costs (compared to a traditional approach)

- ***JPATS reports a 50 percent reduction in program office staffing and a 12 percent improvement in development time. More specific contract cost information will be available following resolution of an ongoing protest***

- ***CDE, as a pure commercial program, reports an R&D cost avoidance of over $900 million, a 42 percent reduction in program office staffing, and a projected $88 million savings due to multiyear contracting.***

- ***Although not awarded, the NDAA program reports a 25 percent reduction in proposal preparation costs and an estimated 18 to 30 percent cost avoidance in projected contract administration costs due to reduced Government unique requirements. Furthermore, the "commercial style" competition between NDAA and the C-17, (along with a C-17 "should-cost" study) directly contributed to a 25 percent reduction in C-17 program costs (approximately $4.4 billion of which $1.7 billion was directly attributable to the NDAA competition).***[1]

These reported results provide preliminary evidence across a wide range of DoD programs of the potential benefits of innovative commercial practices to reduce contract costs, reduce cycle time, and increase in-house efficiencies. More detailed results will be available through 1996, as the programs mature, consistent with accepted program metrics and baselines.

To truly assess the progress of the DAPPs, they must be compared to streamlined acquisition programs (rather than traditional programs) that were undertaken prior to FASA '94. One such program is the U.S. Army's New Training Helicopter (NTH), a commercial Bell 206B helicopter, that was procured prior to the statutory relief available in FASA '94. In

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[1] In addition, the C-17 is projecting a $896 million savings due to multiyear contracting.

March 1995, the General Accounting Office identified NTH as a baseline against which other acquisition reform efforts could be measured. Table ES-1 compares percent reductions in key variables for the NTH with similar reductions as reported by the statutory DAPPs. As presented, the additional relief afforded to the DAPPs appears to have enabled greater reductions in contract data requirements lists (CDRLs), contract costs, and cycle time.

Table ES-1 NTH/DAPP Key Results
(Percent Reductions from Baselines)

Key Measure	NTH	JDAM	FSCATT	JPATS	NDAA	CDE
Mil Specs/Standards	100%	100%	100%	47%	100%	100%
CDRLs*	44%	89%	84%	60%	98%	#
Contract Costs	3.5%	50%	13.5%	**	#	#
Program Office Staffing	~60%	26%	27.3%	50%	79%	42%
Contract Schedule	#	35%	33%	8%	#	#

* **Contract Data Requirement Lists (CDRLs)**

** **Not available due to ongoing protest**

\# **Not available**

In addition to the statutory DAPPs, USD(A&T) designated two programs, the Defense Personnel Support Center and the C-130J, as regulatory DAPPs. These programs also demonstrated continued progress in implementing acquisition reform during 1995 and report preliminary efficiency gains due to the regulatory relief that was granted. Specific reported results include:

- DPSC reports a 24 percent reduction in the average customer charges for medical items from FY94 to FY95 (11.5 percent to 8.7 percent). In addition, DPSC reports a substantial drop in customer charges, down to 5 percent, for those items procured via electronic commerce.

- C-130J, the newest DAPP, was designated a regulatory DAPP on 19 September 1995. The C-130J employs commercial acquisition practices, consistent with the new Federal Acquisition Regulation (FAR) Part 12 (effective 1 October 1995), and reports a 30 percent reduction in program office staff and a 63 percent reduction in contract data requirements. Additional results of implementing the new FAR Part 12 will be reported throughout 1996.

To ensure the development and use of appropriate program metrics and baselines for the DAPPs, the Deputy Under Secretary of Defense for Acquisition Reform (DUSD(AR)) chartered the Pilot Program Consulting Group on Metrics (PPCG) comprised of representatives from the Office of DUSD(AR), the DoD Comptroller, the DoD Inspector General, the Defense Contract Audit Agency, the Defense Contract Management Command,

the Defense Systems Management College, an independent consultant, and the Component Services. The PPCG is directed to assist the DAPP program managers in evaluating and reporting the benefits of the regulatory and statutory relief that was granted. The 1995 Interim Report documents, with the assistance of the PPCG, the progress of the DAPPs during 1995 to implement and measure change as a result of the acquisition reform environment. (The PPCG charter and detailed methodology, as well as the specific regulatory and statutory relief that was granted to the DAPPs, are documented in the PPCG Fall '94 Interim Report.)

1. INTRODUCTION

The Pilot Program Consulting Group on Metrics (PPCG) was chartered on 4 March 1994 by the Deputy Under Secretary of Defense for Acquisition Reform (DUSD(AR)) to advise, assist, and report on metrics and baseline issues for the Defense Acquisition Pilot Programs (DAPPs). This report documents the progress realized by the DAPPs and the PPCG in 1995 in implementing acquisition reform and in measuring the changes occurring as a result of that reform.

This initial chapter summarizes the PPCG membership, the PPCG general metrics methodology, and the composition of the DAPPs. This initial chapter also summarizes the acquisition streamlining benefits realized by the U.S. Army's New Training Helicopter (NTH) Program which was characterized as an acquisition reform baseline by the General Accounting Office (GAO) in a March 1995 report. The DAPPs reported results to date are detailed in Chapters Two through Eight. The PPCG report concludes with a brief summary in Chapter Nine which includes a comparison of the reported DAPP benefits with the achievements of NTH.

1.1 PPCG MEMBERSHIP

The PPCG is chaired by the Director, Commercial and International Systems Acquisition for DUSD(AR) and consists of members from the offices of the DoD Comptroller, DoD Inspector General, Defense Contract Audit Agency, Defense Contract Management Command, the Defense Systems Management College, an independent consultant, and the Component Services. The Group is supplemented with other representation from the Office of the Secretary of Defense and defense agencies, as deemed appropriate by the group.

1.2 PPCG METRICS METHODOLOGY

The PPCG employs a structured methodology to assist the DAPPs and to meet the objectives of the PPCG charter. The DAPP program offices first suggest program-specific acquisition reform baselines and metrics. The PPCG then conducts a detailed review of the program-specific baseline criteria and metrics of each of the DAPPs for (1) conceptual soundness, (2) intended metrics, and (3) adequacy of supporting data and information. The

methodological results are sets of program-specific metrics that reflect the unique circumstances of each program. Details of the PPCG methodology include:

- Conduct a site visit with each DAPP program office to discuss development of evaluation baselines and metrics. These meetings provide a forum for understanding the program and an opportunity to surface any immediate evaluation baseline or metrics issues

- Compile PPCG member comments and recommendations (based upon written trip reports) along with the proposed DAPP evaluation baselines in a single PPCG summary document to be used for detailed analysis and support in developing PPCG issues and/or recommendations

- Prepare a final draft of any issues and/or recommendations for each DAPP that reflects a consensus position of the PPCG membership. Provide the final draft to the DAPP Program Manager

- Based on the PPCG issues/recommendations, negotiate an initial agreement between the PPCG and DAPP Program Manager on the resolution of issues and recommendations. Execute the initial Metrics Agreement between the Program Manager and the PPCG

- Review each DAPP plan for reporting metrics. Where necessary, assist in resolving metrics issues arising from implementation of these plans. Prepare and assist in implementing recommendations that, insofar as possible, ensure consistent and objective metrics

- Review and, as appropriate, provide comments and recommendations on specific evaluation baselines and metrics when they were prepared and documented by each DAPP

- Based upon input from all the DAPPs and the Interim DoD Strategic Outcome Metrics, establish bridge metrics[2] that reflect programmatic process improvements and outcomes.

The major advantages of the PPCG methodology are:

- Ensures that the issues and recommendations for each DAPP are consistent and reflect a broad consensus of PPCG members views
- Reaches a common understanding between the PPCG and each DAPP Program Manager on the resolution of issues
- Shares ideas and approaches to program metrics among the DAPPs
- Ensures that all PPCG member comments are considered and shared with DAPP program managers
- Establishes a written metrics agreement with the DAPP program managers.

This methodology resulted in the successful development of comprehensive metric agreements (or in the case of CDE, draft agreements) with all DAPPs in 1995, except NDAA and the C-130J. The NDAA program was terminated at the joint NDAA/C-17 Milestone Decision in November 1995. The C-130J was designated as a regulatory DAPP by USD(A&T) in September 1995 and an appropriate metrics agreements will be developed in early 1996.

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[2] Bridge metrics measure program outcomes that reflect the process results of acquisition reform, but are not tied to specific instances of regulatory or statutory relief. The term refers to the intent to "bridge" between DAPP metrics and Interim DoD Strategic Outcome Metrics which measure generic outcomes for many programs over time.

1.3 NEW TRAINING HELICOPTER (NTH): GAO ACQUISITION REFORM BASELINE

The NTH is a commercial Bell 206B helicopter (designated TH-67A) that is configured for Army use as a replacement for the UH-1. The NTH effort was undertaken and completed prior to acquisition reform and the statutory relief available in FASA '94. As such, the program is a solid example of the extent of acquisition streamlining that could be achieved by the Services under the pre-FASA '94 regulatory environment, and, thus, is a logical precursor to the DAPPs. In March 1995, the General Accounting Office identified NTH as a baseline against which other acquisition reform efforts could be measured.[3] Based on that finding, the NTH is summarized here for comparative purposes against the acquisition reform that has been achieved by the DAPPs.

From its inception, the NTH program focused on the use of commercial practices, within the context of the then-existing DoD commercial procurement guidelines. Key elements of the NTH streamlining effort included:

- The NTH RFP was significantly streamlined by reducing required clauses by 42 percent and the Statement Of Work (SOW) by 64 percent. Special provisions also were reduced by 30 percent and instructions to offerors by 32 percent.

- No military specifications were invoked and aircraft qualification was accomplished via commercial practices and Federal Aviation Administration (FAA) certification. The RFP described requirements only in performance terms.

- Contractor logistic support that encompassed contractor provisioning, commercial manuals (FAA certified), and no "required" technical data. All technical publications were prepared consistent with commercial practices. Overall contractor data requirements were reduced by 44 percent.

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[3] GAO Report to the Secretary of Defense, Acquisition Reform, Comparison of Army's Commercial Helicopter Buy & Private Sector Buys, GAO/NSIAD-95-54, March 1995.

- Contractor configuration management was employed and, thus, the government configuration control board was eliminated. This enabled the program office to focus on system performance.
- Contractor provided training including the contractor's school.
- Minimal direct government-unique oversight of the contractor.

Key program characteristics and results are summarized in Table 1.3-1.

Table 1.3-1 NTH Metrics

Bridge Metric	NTH Realized
Number of Mil Spec/Standards in RFP	None Required
Number of CDRLs in RFP	6 (Contractor Format)
Number of Pages in RFP	~100 (~60% reduction)
Cost per Flight Hour	$420 per Hour Less Than UH - 1
RDT&E Costs	None
Procurement Savings	$2.9 Million (Commercial Price Adjustment)
Program Office Staff	3-6 People
SOW Pages	96 (64% reduction)
Production Time	5 Months Ahead of Schedule for Completion of Deliveries After Award

As shown, the NTH demonstrated substantial improvements in cost per flight hour, in-house efficiencies and cycle time. The program executive office (PEO) is currently expending less than one workyear of effort. In fact, based upon successful contract award and aircraft delivery, the program office has been disbanded and those government resources have been applied to other Army modernization efforts.

As a precursor to the DAPPs, NTH demonstrated the benefits of commercial practices and commercial item procurement of large training systems prior to acquisition reform and FASA '94. Provisions of FASA '94 that were not available to NTH but now are (or are being) implemented throughout the DoD (and, thus, are available for current programs) include exemptions for commercial items from:

- Contingent fee certifications
- Anti-Kickback Act procedural requirements
- Drug-Free Workplace Act requirements
- Subcontractor direct sales limitations to the United States
- Suspended or debarred subcontractors identification requirements
- Procurement integrity certifications
- Clean Air Act certifications.

1.4 DEFENSE ACQUISITION PILOT PROGRAMS (DAPPs)

In contrast to the NTH, this report is focused on the 1995 progress and results of the five statutory and two regulatory DAPPs that were granted broader statutory and regulatory relief. The intent of the DAPPs was to serve as trailblazers in implementing the broader provisions of FASA '94 and to provide results and lessons-learned for subsequent DoD-wide implementation. Each DAPP program is unique, with its own development and procurement schedule and its own specific regulatory and statutory relief. Thus, results and lessons-learned are expected to be reported over time, consistent with program maturation. This section briefly highlights the program content of each DAPP. Detailed program discussions are presented in Chapters Two through Eight.

1.4.1 Joint Direct Attack Munition (JDAM)

The JDAM program is a joint (Air Force/Navy) Acquisition Category ID project to develop a strap-on guidance kit that will enhance the delivery accuracy of 1000 and 2000 pound bombs. The Air Force, as Executive Service, manages the program through the Air Force Program Executive Officer for Tactical Strike (AFPEO/TS) under a joint agreement with the Navy. The Milestone Decision Authority is USD(A&T). Regulatory relief was granted to JDAM in April, 1994 coincident with the award of two 18 month Engineering and Manufacturing Development (EMD) phase 1 contracts to Lockheed Martin and McDonnell Douglas. McDonnell Douglas (St. Louis) was selected to continue with EMD phase 2 in October 1995.

1.4.2 Fire Support Combined Arms Tactical Trainer (FSCATT)

The FSCATT program is an Acquisition Category III project managed by the Deputy Product Manager, Combat Support Training Systems, at the U.S. Army Simulation, Training and Instrumentation Command (STRICOM) in Orlando, Florida. The Milestone Decision Authority is the Commander STRICOM. Regulatory relief was granted for FSCATT on 7 January, 1994, with subsequent award of the FSCATT Research and Development (R&D) and production contract to Hughes Training, Inc. (HTI), Arlington, Texas in September 1995.

1.4.3 Joint Primary Aircraft Training System (JPATS)

The JPATS program is a joint (Air Force/Navy) Acquisition Category IC program to replace the Air Force T-37B and Navy T-34C aircraft and related ground based training equipment. The Air Force, as the Executive Service, manages the program under a joint agreement with the Navy. The Program Director reports to the AFPEO for Bombers, Missiles and Trainers (AFPEO/ST), with a Milestone Decision Authority of USD(A&T). Regulatory relief was granted for JPATS on 28 February, 1994 which enabled an announced contract award to Raytheon Aircraft Company (Wichita, Kansas) in June 1995; however, the award is currently under protest to the GAO.

1.4.4 Non-Development Airlift Aircraft

The Non-Development Airlift Aircraft (NDAA), an Acquisition Category ID program, was the competitive acquisition of a non-developmental airlift aircraft as a supplement to the C-17. NDAA was managed by an Air Force Program Director who reported to the AFPEO for Tactical and Airlift Programs (AFPEO/TA). The Milestone Decision Authority, USD(A&T), terminated the NDAA program at the C-17/NDAA Defense Acquisition Board (DAB) decision in November, 1995.

1.4.5 Commercial Derivative Engine (CDE)

The CDE program is an Acquisition Category ID project to procure the F-117 engine as the power plant for the C-17A cargo aircraft. The F-117 is a commercial derivative engine that was developed and produced at company expense by United Technologies Pratt & Whitney. Thus, engine performance is established using commercial specifications that meet the C-17A aircraft performance requirements. Consistent with commercial practices, Pratt & Whitney also provides spare engines and logistics support to the user, under the same contract used to acquire the engines. The program is managed by the Air Force Program Manager who reports to the C-17A Program Director and, ultimately, the AFPEO for Tactical and Airlift Programs (AFPEO/TA). The Milestone Decision Authority is USD(A&T). Regulatory relief was granted for CDE on 10 October, 1994.

1.4.6 Defense Personnel Support Center (DPSC)

DPSC purchases medical, subsistence, and clothing and textile items for uniformed members of the Military Services and their dependents world-wide. DPSC's designation as a regulatory DAPP is a natural progression of the center's New Business Strategies Demonstration Program (NBSD), which is an ongoing initiative to demonstrate innovative means of overcoming barriers to buying commercial items and technologies. NBSD is also intended to implement initiatives that permit DPSC to more closely emulate competitive commercial business systems. DPSC participation as a DAPP allows evaluation of regulatory reform in this important commercial sector. Regulatory relief was granted to DPSC on 24 February, 1994. Furthermore, implementation of a FASA '94 commercial item acquisition became available in October 1995 (with the issuance of the new FAR Part 12) and became mandatory on December 1, 1995.

1.4.7 C-130J

The C-130J is an Air Force program, managed by the C-130 system program office (SPO), to enhance the active duty C-130 fleet. The C-130J will feature a two crew member flight system, upgraded Allison AE 2100D3 engines, all composite Dowty R391 propellers, enhanced performance, and improved reliability and maintainability. Lockheed Aeronautical Systems Company is pursuing the C-130J as a commercial venture, with projected sales to the United Kingdom and Australia, as well as, the United States Air Force. Lockheed will develop, test, and produce the C-130J at its own risk and anticipates recovering its development costs (estimated at more than $350 million) by amortizing the cost over the first 120 aircraft. The program will be executed at the Marietta, Georgia, facility (USAF Plant No. 6) where the C-5B, C-141, and C-130 aircraft have been produced. Since the C-130J is a follow-on configuration change from the C-130H (currently in production), the C-130J Program/Acquisition has been classified as an Acquisition Category (ACAT) 1C, Phase IV Program. Accordingly, the Milestone Decision Authority (MDA) is SAF/AQ.

1.5 CONTENTS OF THE 1995 INTERIM REPORT

The above statutory and regulatory DAPPs are described in greater detail in Chapters Two through Eight of this report. Each chapter focuses on a specific DAPP and includes a more detailed program description, as well as, the program's reported quantitative and

narrative results of acquisition reform. Chapter Nine provides an overall summary of the DAPPs progress to date.

2. JOINT DIRECT ATTA CK MUNITION (JDAM)

This chapter summarizes some of the initial benefits of acquisition reform that are being reported by the JDAM program. A short program description and summary of the acquisition strategy are provided. JDAM results to date are also presented consistent with JDAM specific metrics and bridge metrics.

2.1 PROGRAM DESCRIPTION

The JDAM is a joint Air Force/Navy program to develop an affordable, accurate, all weather guidance kit for 1,000 and 2,000 pound bombs that are currently in the inventory. The guidance kit includes an inertial navigation system augmented by Global Positioning System (GPS) updates. The guidance unit attaches to the bomb and, through controlled tail fin movements, directs the bomb to the target. The JDAM is to be integrated on the B-1, B-2, B-52, F-15, F-16, F/A-18, F-22, F-117, and AV-8 aircraft.

Overall, the JDAM is a military-unique system without commercial counterpart; however, the major hardware elements in JDAM incorporate commercial parts. The inertial measurement system, GPS receiver, computer and control actuators account for approximately 85 percent of the system hardware cost. These elements are currently produced by several commercial providers. Furthermore, each of the items either have been or could be sold to commercial buyers but with different specifications. Under the appropriate conditions, the commercial sector could produce these items using the same plant, work force and equipment for both JDAM and commercial applications. Most of the other components (wings, wiring harnesses and metal structures) use manufacturing processes that are generic to the commercial sector and the requirements for these components are not so stringent that they would exceed what commercial companies might produce for a commercial buyer. Thus, they are amenable to manufacture using commercial processes and dual-use processing equipment.

The nature of JDAM suggests that the major savings available from the pilot initiatives would accrue in production rather than development. The realization of potential savings relies on the prime contractor’s ability to merge the JDAM development and production with ongoing commercial efforts and the degree to which key vendors are able to take advantage of the statutory and regulatory relief to enhance the ability to acquire JDAM under commercial acquisition procedures.

Given the above, the JDAM DAPP is intended to demonstrate that the prime contractor and key subcontractors are able to develop the JDAM using practices, processes, and procedures from their commercial sector business base. Government management and decision processes are expected to parallel those of a smart, resource-limited commercial buyer, thereby reducing Government oversight, monitoring, and checking. The program should enable some subcontractors to participate that had previously refused to consider defense programs. Finally, the program is expected to meet the planned development schedule without the process delays that have been incurred on other major defense programs.

2.2 PROGRAM MANAGEMENT/ACQUISITION STRATEGY

The JDAM is an Acquisition Category I program managed by an Air Force Program Director, who reports to the Air Force Program Executive Officer for Conventional Strike. The program involves a 2-phased engineering and manufacturing development (EMD) effort leading to initial production deliveries in FY98. The phase I EMD effort began in April 1994 and involved 2 competing contractors, McDonnell Douglas Aircraft (St. Louis, Missouri) and Lockheed Martin. The primary focus of phase I EMD was to reduce manufacturing risk and projected average unit production price (AUPP). The phase 2 EMD effort was initiated in October 1995, with the down-select to one contractor, McDonnell Douglas. The phase 2 EMD effort is directed towards completing development with emphasis on development and operational testing. The phase 2 EMD contract is a cost plus award fee contract valued at approximately $70 million with a period of performance from October 1995 to January 1999. The contract also includes two firm fixed price production options valued at $55 million.

2.3 RESULTS TO DATE

The JDAM program is an example of employing commercial practices and regulatory/statutory relief to their fullest advantage in a weapon system acquisition. JDAM was initially granted 15 FAR and 11 Defense Federal Acquisition Regulation Supplement (DFARS) waivers; which was later augmented by granting an additional 10 FAR and 14 DFARS waivers. The most substantial relief was the allowance to use commercial practices, consistent with FASA ‘94. This relief enabled JDAM to undertake the following:

- Use of a "Rolling Downselect"[4] process that featured continuous information exchange between the government and its industry partners
- Streamlined oversight of both the program and the contractors
- Use of a "commercial-like" warranty which guarantees the contractor will repair or replace any defective item (warranty costs included in equipment price) for a 20-year period
- Aggressive use of integrated process teams (IPTs) including government personnel on contractor teams at the contractor site
- Program/contractor management at the system specification level
- Use of contractor formats for most data submittals, program reviews, design reviews and earned value reporting
- Use of long-term prime/subcontractor relationships.

2.3.1 JDAM Specific Metrics

The "weapon systems" nature of the JDAM program leads to the development of program metrics that are directly traceable to program outcomes such as cost, schedule, and performance. JDAM program specific metrics include:

- Program cost
- Cost estimate change rationale
- Program office staffing

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[4] "Rolling Downselect" refers to a series of interim performance evaluations conducted during the evaluation period based on the down-selection criteria. The Government subsequently rendered interim opinions to each contractor comparing their performance to the down-selection criteria. The intent of these evaluations was to have the contractors report progress to the Government selection authority and to offer the contractors an opportunity to correct deficiencies.

- Operational performance
- Average unit procurement price (AUPP)
- Milestone billing versus cost-based billing
- Program funding stability
- Down-select would cost analyses
- Regulatory/statutory relief.

This section summarizes JDAM reported results to date against these agreed-upon metrics. Section 2.3.2 presents a brief summary of other reported program results and JDAM bridge metrics.

Program Cost — This metric is intended to measure cost changes with a desired outcome of less program cost than the baseline estimate ("business as usual" - prior to acquisition reform). The measure includes total program cost, research and development cost, procurement cost, and operations and support cost. The Cost Analysis Improvement Group (CAIG) estimate and the corresponding Program Office Estimate (POE)/Service Cost Position (SCP) performed at major milestones are presented in Table 2.3-1. The Average Unit Procurement Price (AUPP) values for the various milestones are also presented.

Table 2.3-1 JDAM Program Cost Estimates

Cost Element	Milestone I*		Milestone II*		Milestone III	
	POE/SCP	CAIG	POE/SCP	CAIG	POE/SCP	CAIG
	(Baselines)					
Development	514	346	376	380		
Aircraft Integration	657	893	464	478	TBD	
Procurement (74,000)	3559	3593	1850	2012		
Operation & Support (O&S)	290	290	130	130		
Total	5020	5122	2820	3000		
AUPP (FY 95$/K)	45.4	48.6	22.3	24.4		

*** MS I development estimate included 380 development units; MS II development estimate included 630 units.**

As shown in Table 2.3-1, the JDAM program office (and the CAIG) program cost estimates were substantially reduced between the Milestone I estimates (pre-DAPP) and the Milestone II estimates (DAPP program). Even the more conservative CAIG estimate shows a 50 percent reduction in average unit procurement costs. The total program cost estimate for

JDAM was reduced by approximately $2.0 billion (constant FY95 dollars), as of Milestone II.[5]

Cost Estimate Change Rationale and Tracking — This measure is directly linked with the cost metrics above and provides an accounting or tracking for each of the major differences in the various estimates over time. The change category is annotated along with the specific dollar value. The intent of this measure is to identify major cost changes due to acquisition reform versus those due to fact-of-life or other changes.

Development, production, and operations and support cost estimates are tracked for the Program Office Estimate/Service Cost Position. The data are stratified in various formats including contract versus government costs and Air Force versus Navy costs. Due to the volume of data, the cost track summary is presented in Table 2.3-2 from Milestone I to Milestone II. The next substantial measure will be at Milestone III in mid-FY98.

Table 2.3-2 JDAM Life Cycle Cost Track
(Millions of FY95 Dollars)

Cost Element	MS I SCP	MS II	DELTA
DEM/VAL	226.1	188.2	-37.9
AF	164.3	153.0*	
USN	61.8	35.2*	
EMD	288.1	187.8	-100.3
AF	147.2	145.0	
USN	140.9	42.8**	
PRODUCTION	3558.6	1849.8	-1,708.8
AF	2944.5	1441.1	
USN	614.0	405.7***	
O&S	289.8	129.6	-160.2
AF	214.8	71.8	
USN	75.0	57.8	

* FY93-95 Sunk Cost
** No JPF, PIP, or GP 2/3 Integration
*** Includes USN Common/Unique (KITS/Bombs/Fuzes)
\# Demonstration \ Validation Phase (DEM/VAL)

Significant projected JDAM cost variances are summarized in Table 2.3-3 for phase 2 EMD and Table 2.3-4 for production.

[5] The PPCG has not independently verified the JDAM cost reduction documentation.

Table 2.3-3 JDAM Phase 2 EMD Cost Track

Cost Element	Millions of FY95 Dollars	
	MS I SCP	MS II
Software Design - Deleted TPS S/W ($6.9M) - Deleted rehosting ($4.9M) - New S/W sizing/distribution by phase - Added alternative for CFMRE/AFMSS ($1M)	21.2	5.4
SE/PM & CMD/Launch - 60 people/yr per SCP - MS II based on 15 people using EMD 1 actuals - 43 plus mos vs. 30 mos EMD 2	31.8	15.6
System Test and Evaluation - 20% factor on reduce design costs	14.2	7.1
Tooling - Higher rate in EMD 2 (60/mo) - Based on vendor quotes - Capitalization vs. direct cost	3.7	13.3
Recurring H/W - 249 Ground Test Vehicles (GTVs) → 630 GTV @60% reduction	34.5	37.4
Other - Transfer of Engineering Change Orders (ECO) to Govt costs - 30% ECO reduced to 6% - Deleted Low Rate Initial Production (LRIP) long lead tooling @ $3.7M - $12.1 for TM/FTS vice $4.3M due higher TM cost plus increase qty	17.2	13.4
Program Office - Cut B1 - $14.9 million in FY97 for 5 add'l FLT 2-1/2 mos of CTF/Boeing/Rockwell - Shorter EMD 2 schedule	47.4	21.1
Testing - MS I SCP included 34 F/18 sorties (DT) / 16 F/18 sorties (OT) - MS II baseline now reflects 27 B52 sorties, 93 F16 sorties, 38 GTV/20 STV sorties for F/18 - Added margin testing - AFOTEC shortfall due to acceleration - B52 shortfall due to acceleration	6.9	39.8

Table 2.3-4 JDAM Production Cost Track

Cost Element	Millions of FY95 Dollars	
	MS I SCP	MS II
Recurring Hardware - MS I based on engineering judgment of generic design - MS II based on PDR design w/decrements	2715.9	1951.6-618.2=1333.4
SE/PM - MS I SCP based on 12% H/W (~ 100 MY/YR) on 20 lots - MS II based on 13 MY/YR on lots 1 & 2 27MY/YR on lot 3-11	341.9	39.3
Other - MS I SCP based on 4% ECO plus 1% warranty (5yr) - MS II based on 2% ECO plus 5% warranty (20yr)	170.0	178.5
Tooling - MS I SCP based on Navy CER for rate tooling @ 4,105 units/yr - MS II based on contractor proposed capitalization w/sustaining maintenance	30.4	6.9
Spares - MS I based on 1% H/W - MS II zero cost based on 20-yr extended warranty	13.0	0

Program Office Staffing — The effect of acquisition reform on in-house efficiencies should be evident by changes in the total number of people (program office, contract administration, and audit) that are employed to manage the program. Unfortunately, overall staffing varies significantly from program to program within the same service. Furthermore, to compare program office staffing in the Navy with that of an Army or Air Force program office is not meaningful due to normal service acquisition differences. (Thus, a direct comparison of JDAM to JSOW is inappropriate.) An appropriate comparison is the actual JDAM experience to the normally allotted Air Force program. Figure 2.3-1 presents the baseline for AFMC standard program offices for programs similar to JDAM, 150 people including government and contractor support. Also included is the SAF/AQ baseline figure of 140 people for program offices with relatively complex development programs. The values for government people (military, civilian, and support contractors) are depicted as a function of program phase.

Figure 2.3-1 JDAM Program Office Staffing

As shown in Figure 2.3-1, JDAM is realizing substantial reductions in program office staffing compared to the baseline estimates and actual MS I experience.

Program Operational Performance and Cost — The focus of this metric is to measure tradeoffs of performance for cost, i.e., cost as an independent variable. Many trades were made during phase 1 EMD during which the Manufacturing Development Initiative (MDI) was employed in the current acquisition reform environment. In fact, large reductions in unit price were possible by trading other "performance" requirements. These trades were made with the full involvement and encouragement of the operational user who ultimately made the trade decisions.

During phase 1 EMD no critical ("live or die") requirements were traded. In phase 2 EMD, the JPO will measure changes in two performance requirements against changes in AUPP. The two performance requirements include one "live or die" requirement — accuracy — and one non "live or die" requirement — reliability. The JPO plots reliability and accuracy at each of the milestones with the MS I values representing the baseline, as shown in Figure 2.3-2. (Note, Figure 2.3-2 includes the 30 meter Circular Error Probable (CEP) without GPS data available. A second baseline, a 13 meter CEP with GPS, is also being tracked). Both the CAIG and Program Office Estimates (POE) for AUPP, presented earlier, will be plotted on these same graphs. While it will be possible to show changes in AUPP along with changes in

performance, it may not always be possible to equate a specific unique change in performance to a specific change in price.

Figure 2.3-2 JDAM Performance Metrics

Unit Cost Comparison With Similar Systems — The PPCG is specifically interested in comparing unit production costs of JDAM with similar programs, particularly the Joint Stand Off Weapon (JSOW), since both systems employed similar technology but one (JSOW) was procured under traditional processes and had an original requirement for common hardware with JDAM. The JSOW and JDAM programs are not directly comparable. The guidance and control unit (GCU), the most significant and expensive part of each program, while it does not share identical hardware, does share common software to the maximum

extent practicable. A JDAM Program Office metric has been designed to compare the cost of the GCU for JSOW with that of JDAM. The JSOW GCU production unit cost for Milestone I was $40.6K based upon 11,504 JSOWs. The JDAM MSI GCU estimate for the McDonnell Douglas approach was $27.8K based on 40,000 JDAM units. The metric is still considered viable; however, it will be closely monitored over the program to ensure that JSOW remains an appropriate baseline.

Milestone Billings Versus Cost-Based Billings — The intent of this metric is to measure the benefit of the use of milestone billings versus the cost-based billing process that was used in pre-DAPP efforts. The JDAM phase 2 EMD contract is a cost plus award fee (CPAF) effort and will not involve milestone billings. Both the contractor and the JPO are continuing to collectively evaluate the potential benefits of milestone billings for the production program. This measurement will require the collective efforts of the Program Office, DCMC, DCAA, and the Defense Finance and Accounting Service (DFAS) since each of these agencies has a role in billings and payments. If a firm decision is made to use milestone billings in the JDAM production program, the DCAA/DCMC/DFAS/JPO team will measure workhours expended by each government agency and the contractor for three or four similar programs which use cost-based billings and compare them with the workhours for JDAM milestone billings. The workhour figures will be converted to dollars using standard labor categories. The planned data collection effort is depicted in Table 2.3-5. This information will not be collected until the JPO and McDonnell Douglas decide to use milestone billings and exercise a production option. Thus, it will be at least two years before any data is collected.

Table 2.3-5 JDAM Milestone vs. Cost-Based Billing

Workhours	JDAM (Milestone)		Cost-Based Programs (Baseline)	
	Government	Contractor	Government	Contractor
			3-4 Programs	

Program Funding Stability — This metric attempts to measure funding stability that may be provided to pilot programs. Information and a funds track over time will continue to be provided as shown in Tables 2.3-6 and 2.3-7. The information is intended to show the amount of “meddling” with program funding which usually prevents program stability. That is, there are direct correlations between meddling and funding stability and between funding stability and program stability. The baseline or approved level for this metric is the FY 1997 Budget Estimate Submission (BES) used at MS II. The required lines represent the Program Office Estimate (POE) at MS II. Funds are broken out for Air Force and Navy. The JDAM

JPO is tracking major categories of changes to these values such as reprogramming, Program Budget Decisions (PBDs), and transfers of funds. This may provide some insight into where changes are made and the level of funding stability. This information is presented in Table 2.3-6 for RDT&E appropriations and in Table 2.3-7 for procurement.

"Would Cost" Analyses — The intent of this metric is to document what cost "would have been" for JDAM if regulatory and statutory relief had not been granted and JDAM had been conducted in a traditional manner. The program office has not elected to have the contractor conduct a "would cost" study to establish, as one baseline, the contractor's opinion of the cost of EDM II if regulatory and statutory relief had not been granted. To date, the JDAM "would cost" analyses have concentrated on the government contract administration and audit hours. These results are reported as part of JDAM bridge metrics in Section 2.3.2 and Table 2.3-7.

Regulatory and Statutory Relief Benefits — The intent of this metric is to measure the benefit of each specific regulatory and statutory relief provided to the JPO; however, it is difficult to separate and measure each specific relief or management initiative taken in JDAM. For example, distinguishing between the pilot program relief to use commercial practices and the management initiatives to eliminate encumbering military specifications and standards is difficult. The JDAM JPO has identified each of the regulatory and statutory relief waivers granted to date and, with the assistance of the contractor, will conduct a one-time assessment of cost, time, or performance impacts. Some grouping of waivers will likely be required where the impact of individual regulations or statutes are not separable.

2.3.2 Bridge Metrics

Table 2.3-8 presents the JDAM bridge metrics, with the JDAM Pre-DAPP effort as the baseline. As shown, the JDAM DAPP effort eliminated military unique specifications and reduced contract data requirements by an order of magnitude. The JDAM RFP was reduced by over 70 percent, while reported B&P costs were cut in half. Finally, contract administration hours show a reduction of 85 percent to date, while SPO staffing has already been reduced by 26 percent.

Table 2.3-8 JDAM Bridge Metrics

Bridge Metric	Baseline JDAM Pre-DAPP	Realized
Number of Mil Spec/Standards in RFP	87	0
Number of CDRLs in RFP	250	24
RFP Preparation Work Hours	Not Available	Not Available
DCAA Audit Hours	3691	3571
Proposal Evaluation Time (Workhours)	35,000	11,000
Number of Pages in RFP	986	285
Winning Contractor B&P	$5.65 million	$2.52 million
Contract Costs (GCU, Est vs. Award)	$40.6K	$14.8K
CAS Work Hours	2067	317 to date
Program Office Staffing (FTEs)	86	64
Contract Cost Variance	Not Applicable	None to Date
Contract Schedule Variance	Not Applicable	None to Date
Performance 1 (With GPS)	13 meter CEP**	13 meter CEP**
Performance 2 (Without GPS)	30 meter CEP**	30 meter CEP**

* FTEs = Full Time Equivalent Positions

** CEP = Circular Error Probable

In addition, the JDAM SPO is reporting substantial reductions in projected production schedules, improved warranty provisions, and statement of work streamlining. These results are summarized in Table 2.3-9.

Table 2.3-9 Additional JDAM Results to Date

Metrics	Baseline JDAM Pre-DAPP	JDAM Realized
Statement Of Work Pages	137	2
Warranty Length	5 years	20 years
Development Time (EMD II)	46 months	30 months
Production Time	15 years	11 years
Source Selection Time	3 months	6 weeks

The most dramatic results of the JDAM acquisition reform efforts are the reported reduction in development cost of $200 million (then-year), the reported reduction in projected average unit production prices of 50 percent (which translates to a $2.7 billion cost avoidance in total production costs over an 11-year production cycle), an 85 percent reduction in contract administration hours to date, and a 34 percent reduction in development time. Clearly, JDAM results to date demonstrate the applicability of commercial practices to major defense acquisition programs (MDAPS) and the efficiency gains that can be achieved from employing commercial practices to their fullest to streamline acquisition practices. As reported by the program office, acquisition reform is enabling JDAM to realize substantial in-house efficiency gains, reduce contract costs, and improve cycle times.

3. FIRE SUPPORT COMB INED ARMS TACTICAL TRAINER (F SCATT)

This chapter summarizes progress by the FSCATT program in implementing acquisition reform in 1995. The chapter includes a brief summary of the program and acquisition strategy. FSCATT reported results to date are presented as program metrics as well as bridge metrics.

3.1 PROGRAM DESCRIPTION

FSCATT is a two-phased effort to provide training of the Army Field Artillery Gunnery Team. FSCATT Phase I will provide battery level training by monitoring activities, recording performance and producing after-action reports on individual skills, crew drills and complete battery fire missions. It will also provide an overarching architecture as the foundation for growth into Phase II - production of a collective trainer that simulates artillery activities within the Combined Arms Tactical Training synthetic environment. The goal of Phase I is to exercise the Artillery Gunnery Team in realistic fire missions without the attendant cost of live fire training.

A Request for Proposal to develop FSCATT Phase I, significantly modified to include DAPP acquisition reform initiatives including a fixed price contract form, was released in May, 1994 to 81 prospective bidders. Proposals were received in August, 1994, and the resulting contract was awarded on 26 June 1995 to Hughes Training, Inc. (HTI), Arlington, Texas. The FSCATT contract, with options, is a fixed price award fee contract with a value of approximately $106 million and a seven year period of performance.

As a DAPP, FSCATT is intended to demonstrate that the concepts of dual-use technology could be applied to a defense program in addition to demonstrating the capability of integrating commercial and Non-Developmental Item (NDI) components into a complete system. The visual simulation software and hardware and training support software have direct application to both the commercial entertainment and education communities. These capabilities have already begun to transition to the commercial market. Other components (e.g., wiring, metal structures, etc.) use manufacturing processes that are generic to the commercial sector and can be manufactured using commercial processes and dual-use equipment. The FSCATT metrics are tailored to reflect these program objectives in the acquisition reform environment.

3.2 PROGRAM MANAGEMENT/ACQUISITION STRATEGY

The FSCATT program is an Acquisition Category III project managed by the U.S. Army Simulation, Training and Instrumentation Command (STRICOM) in Orlando, Florida. STRICOM is responsible for the technology base for simulation and training, and is the DoD focal point for Distributed Interactive Simulation (DIS) environment. STRICOM acquires training devices, instrumentation, threat simulators and targets, and provides life cycle support for fielded products and quality support to the soldier. The Milestone Decision Authority is the Commander, STRICOM. The FSCATT Program Manager reports to STRICOM through the Product Manager, Combat Support Training Systems (CSTS) and the Project Manager for Training Devices.

3.3 RESULTS TO DATE

FSCATT results to date are best evidenced by the program's reported metrics data. This section presents the FSCATT reported program metrics as well as bridge metrics.

3.3.1 FSCATT Metrics

Consistent with the FSCATT program objectives, the following metrics were developed by the program office and coordinated with the PPCG:

- Competition
- Quality Assurance and Test and Evaluation
- Commercial Spin-On Technology
- RFP Content
- Program Office Support
- Would Cost
- FSCATT Cost
- Project Schedule
- Funding Stability

- Milestone vs. Cost-Based Billing
- Statutory/Regulatory Relief.

FSCATT progress against each of these metrics is discussed below.

Competition — As discussed in Section 3.1, one of the objectives of the FSCATT DAPP was to draw upon the commercial counterparts of the FSCATT hardware elements and, therefore, to expand the competitive industrial base. The competition metric is intended to assess whether the removal of unique DoD requirements (via regulatory and statutory relief), resulted in a larger number of firms (particularly commercial firms) proposing on the FSCATT program. A substantial number of commercial firms were identified as having the technology to participate as a prime contractor or subcontractor on the FSCATT contract.

Table 3.3-1 indicates that the FSCATT program did not involve substantially more prime bidders or major subcontractors than 10 prior STRICOM programs; however, one of the major subcontractors that participated in FSCATT had not previously done business with the government. Thus, the FSCATT DAPP facilitated slightly greater participation by non-defense oriented firms.

Table 3.3-1 FSCATT Competition Metric

Average Conventional Program (Baseline - 10 Program Average)		**FSCATT DAPP (Metric)**	
Number of Bidding Teams	Major Subcontractors	Number of Bidding Teams	Average Major Subcontractors
4	3.2	4	5

Subsequent discussions with FSCATT prime bidders indicated that industry teaming arrangements (largely defense oriented) were established prior to the institution of the DAPP and were not substantially revisited as a result of regulatory relief. The FSCATT results indicate that more aggressive DoD actions, beyond regulatory relief, may be required to further stimulate commercial firms participation in the DoD market.

Quality Assurance and Test and Evaluation — The FSCATT DAPP is intended to rely upon commercial practices for quality assurance and test and evaluation. This metric will compare the number of workhours for FSCATT quality assurance and test and evaluation with three similar programs. Consistent with the FSCATT metric agreement, the program office has identified three comparable programs to serve as the baseline:

- Guard Unit Armory Device Full-crew Interactive Simulation Trainer (GUARDFIST II)
- Precision Range Integrated Maneuver Exercise (PRIME)
- Thru-sight Video (TSV).

Data are being collected on the baseline programs and should be available during the second quarter of FY96.

Commercial Spin-On Technology — As discussed in Section 3.1, one of the objectives of the FSCATT DAPP was to draw upon commercially-available technology to meet DoD needs. This metric is intended to capture the opportunistic government adaptation of commercial technology for DoD use. "Spin-on" opportunities are assessed at the prime contractor and major subcontractor levels. To date, the FSCATT program office has coordinated this metric with HTI; however, no specific "spin-on" opportunities have been identified. The program office projects that data collection will continue on this metric until system verification in May 1997. Therefore, as of the publication of this report, the PPCG cannot yet assess the effect of regulatory and statutory relief related to commercial technology applications for FSCATT.

RFP Content — One of the primary objectives of providing regulatory and statutory relief is to streamline DoD business practices and procurement processes. The ultimate benefit of such streamlining is reduced in-house and contractor costs. Such cost benefit typically can only be assessed later in the program. Interim progress measures of streamlining (or process metrics) include the number of military standards; the number of military specifications, the number of contract data requirements, and the number of reviews.

The FSCATT RFP content metric captures interim measures by comparing FSCATT DAPP results with other similar STRICOM programs and FSCATT pre-DAPP efforts. These data are summarized in Table 3.3-2. The baseline programs are GUARDFIST II, Tank Weapons Gunnery Simulation System, Advanced Gunnery Training System, and the Multiple Integrated Laser Engagement System (MILES) 2000.

Table 3.3-2 FSCATT RFP Content

Measure	FSCATT Pre-DAPP RFP (Baseline 1)	Average Similar Programs (Baseline 2)	FSCATT DAPP RFP (Metric)
# of Mil Stds	38		0
# of Mil Specs	8		0
# of CDRLs	45	55	8
# of Reviews	21	TBD	1

The contracts for the baseline programs are being reviewed further to segregate the specific number of military standards and specifications and to ascertain the number of reviews. These data will be available in the second quarter of FY96. As shown in Table 3.3-2, FSCATT realized substantial reductions in unique military standards/specifications and data requirements. Furthermore, the FSCATT DAPP effort resulted in a large reduction in planned reviews compared to the baseline FSCATT program.

Program Office Support — The regulatory and statutory relief that was provided to FSCATT should enable the program office to streamline its RFP preparation, source selection, and post-award processes. The benefits of such streamlining should be evidenced by a reduction of in-house workhours. The intent of this metric was to capture the effect of regulatory/statutory relief on FSCATT program office workhours by comparing FSCATT performance with other similar programs.

FSCATT workhours for RFP preparation, source selection, and post-award are contrasted to other similar programs and the pre-DAPP FSCATT experience in Table 3.3-3. As shown, FSCATT has incurred substantially fewer workhours in RFP preparation and source selection than comparable STRICOM programs. Post-award workhours for FSCATT and other ongoing programs are being collected and will be assessed over the course of the programs. The pre-award data (RFP preparation and source selection) clearly indicate that FSCATT realized substantial reductions in in-house costs (workhours) when contrasted to other similar programs at STRICOM.

Table 3.3-3 FSCATT Program Office Support Results to Date

	RFP Prep (Workhours)	Eval Time (Workhours)	Post AWD (Workhours)
TWGSS	8,245	4,733	19,947
GF II	7,966	8,271	13,742
RDMS	5,362	7,887	29,082
DSCS	10,838	22,368	79,825
TSV	8,245	8,448	19,479
JRTC	9,787	14,970	29,774
AGTS	4,764	11,454	57,722
MILES 2000	6,566	5,452	4,665
WARSIM	6,941	5,046	N/A
FSCATT BASIC	3,670	N/A	N/A
FSCATT DAPP	2,678	2,513	N/A

Legend:

AGTS	Armored Gun Training System
DSCS	Defense Satellite Communications System
FSCATT	Fire Support Combined Arms Tactical Trainer
GF II	Guard Unit Armory Device Full-Crew Interactive Simulation Trainer II
JRTC	Joint Readiness Training Center
MILES	Multiple Integrated Laser Engagement System
PROD	Production
RDMS	Range Data Measurement Subsystem
TSV	Thru-Sight Video
TWGSS	Tank Weapon Gunnery Simulation System
WARSIM	Warfighters Simulation 2000

Would Cost Estimate — The cost effects of regulatory relief on the contractor side are captured through a detailed would cost, conducted by HTI and the FSCATT program office from October to December 1995. The would cost considered estimated costs for each contract line item, if regulatory relief had not been granted. The analyses incorporated the major FSCATT subcontractors and considered key cost drivers. Finally, the HTI/FSCATT would cost was reviewed and verified by DCAA. The purpose of DCAA's review was to determine if HTI's reported cost savings are supportable and represent a reasonable estimate of the savings resulting from relief granted as a DAPP.

The results of the would cost analyses are summarized in Table 3.3-4. The would cost analysis found that the DAPP program should result in a $14,000,000 (13.5 percent) contract cost savings to the FSCATT program.

Table 3.3-4 Hughes Training, Inc. Would Cost Analysis

Cost Driver	Percent Savings
Quality Assurance	0.2%
Data/Configuration Mgt.	0.1%
Program Mgt.	0.3%
Test and Evaluation	0.1%
Contract Type and Structure	1.3%
Design and Assembly	1.0%
Software Development	1.5%
Manufacturing	4.6%
Parts Control & Procurement	3.4%
RAM/ILS	1.0%
Total Savings:	13.5%

The major areas of programs savings, shown in Table 3.3-4, include:

- **Manufacturing (4.6 percent savings)** — The waiver of military standards and requirements results in savings related to fabrication, test, quality control and shipment of deliverables because HTI is able to use less costly processes. In addition, savings will be realized due to elimination of the Low Rate Initial Production contract phase requirement.

- **Parts Control and Procurement (3.4 percent savings)** — Savings result under the DAPP by allowing production using commercial rather than MILSPEC parts; MILSPEC parts require costly certifications which are not necessary under this contract. Savings are also realized in procuring these parts because the contractor can take advantage of existing commercial vendor relationships.

- **Software Development (1.5 percent savings)** — The waiver of tasks required by Military Standards allows HTI to realize savings in software design, coding, production, tracking and record keeping efforts by using alternative commercial and internal practices.

- **Contract Type and Structure (1.3 percent savings)** — HTI was granted relief from detailed contract cost reporting which has resulted in substantial savings.

Beyond the specific dollar values, the FSCATT EMD program contains key elements that are not easily quantifiable based on requirements that were specified in the contract, such as the Statement of Work or specification. Key "intangibles" (items not included in the would-cost initiatives) that impact the FSCATT EMD program include:

- **Integrated Product Teams** — FSCATT incorporates an aggressive implementation of management policies and principles based around the concepts of continuous measurable improvement, concurrent engineering, and Integrated Product Teams (IPTs).

- **Financial Structure** — The financial structure is a combination of pre-execution payments, milestone billing events, and a fixed price award fee structure with a zero-based award fee that is designed to provide incentives to the contractor to meet all cost and schedule objectives in order to maximize the financial attractiveness of the FSCATT program. Key financial incentives include (1) positive program cash flow and (2) a 15 percent award fee (zero-based).

- **Fixed-Price EMD Contract** — The FSCATT system is based primarily on the integration of subsystems that are essentially non-developmental items and commercial off-the-shelf hardware. Additionally, extensive pre-contract award technical management activities, to include establishing teaming agreements and instituting the IPT process early, provided mature FSCATT subsystem prototypes by contract award. All provided strong incentives to use a fixed-price EMD contract.

FSCATT Cost — The comprehensive cost effects of the FSCATT DAPP can only be assessed by reviewing total program costs. The intent of this metric is to provide insight into the cumulative cost effects of regulatory/statutory relief by comparing the FSCATT DAPP program costs with the Army Pre-DAPP baseline cost estimate for the program.

The Army Cost Position (ACP) for the FSCATT program, summarized in Table 3.3-5, is the Pre-DAPP program cost baseline. The ACP is a fully documented estimate that was developed through a detailed reconciliation of the STRICOM Baseline Cost Estimate and the Army Cost and Economic Analysis Center's (CEAC) Independent Cost Estimate. The ACP,

completed prior to receipt of the contractor proposals, represents the Army's best estimate of the Pre-DAPP FSCATT program costs.

Table 3.3-5 FSCATT ACP Summary (Millions of Dollars)

Cost Element	Constant FY95 Dollars	Escalated Dollars
RDT&E	$22.181	$23.047
Procurement	$151.168	$185.758
Military Construction	$0.000	$0.000
Military Personnel	$1.581	$1.666
Operations and Maintenance	$61.316	$86.758
Defense Business Operations Fund	$0.000	$0.000

Based upon a successful contract award, the FSCATT program office is currently coordinating with CEAC to reconcile the ACP with the contract award value. The reconciled ACP will be available later in FY96 and will serve as a measure of total program savings.

Project Schedule — Efficiencies gained due to acquisition reform extend beyond program costs to include more rapid response time (schedule) and enhanced performance (quality). This metric is intended to capture schedule improvements realized by the FSCATT DAPP due to regulatory and statutory relief. The metric compares the FSCATT Pre-DAPP project schedule with the DAPP project schedule. Detailed analysis of key program milestones will continue throughout the EMD program.

Overall EMD results to date are summarized in Table 3.3-6. As shown, the planned FSCATT DAPP schedule is a 33 percent improvement over the originally planned pre-DAPP schedule. In addition, current HTI projections indicate a potential further acceleration of 2 months.

Table 3.3-6 FSCATT EMD Schedule

Measurement	EMD Schedule (Months)
Pre-DAPP	36
DAPP	24
Current Projection	22

Funding Stability — The PPCG clearly recognizes that the potential process changes associated with acquisition reform could be dwarfed by changes in program budgets. Furthermore, numerous studies over the last decade have identified funding instability (changes in program budgets at levels above the program office) as a substantial contributor

to cost and schedule growth in defense programs. The intent of this metric is to track the funding stability (or instability) of FSCATT compared to 3 similar STRICOM programs.

FSCATT has initiated data collection for this metric, which will continue through the life of the program. To date, FSCATT has not enjoyed stable funding despite specific direction issued by USD(A&T) in a memorandum on DAPP designation and statutory relief to the Secretaries of the Military Departments and the Under Secretary of Defense (Comptroller), dated 15 December 1994. Contrary to USD(A&T) direction, internal Army actions continue to reduce FSCATT FY96 appropriated funds. Additionally, Congressional budget actions (undertaken due to misunderstanding of FSCATT's commercial milestone billing approach) deleted $3 million of the FY96 appropriation. The Army has, on several occasions, indicated they will seek to restore the $3 million; however, no such action has been finalized to date.

Milestone vs. Cost-Based Billing — The use of milestone billing is a key element of the FSCATT DAPP. Milestone billing should enhance program performance while minimizing administrative complexity by paying the contractor based on demonstrated accomplishments (versus as costs are incurred). STRICOM is currently coordinating a methodology for this metric with the Defense Contract Management Command, Defense Finance and Accounting Service, and HTI. The methodology will involve a "would cost" approach for determining milestone billing amounts versus a formal determination of actual costs incurred as is done under the cost-based approach.

Statutory/Regulatory Relief — This metric is actually a broad measurement category that is intended to capture the cost and personnel impact of specific regulatory or statutory waivers that were granted to the FSCATT DAPP. The FSCATT analysis will include comparisons and estimates of workhour and dollar cost savings which results from specific relief versus the anticipated expenditures that would have been incurred without the relief. Some grouping of waivers will likely be required where the impact of individual regulations or statutes are not separable.

The FSCATT program office is currently working with HTI to develop a methodology for determining personnel and cost savings and then correlating those savings with specific relief. Thus, at this juncture, metric data is not available to support PPCG analyses; however, data are anticipated throughout the life of the program.

3.3.2 Bridge Metrics

In addition to program specific metrics, FSCATT also reports bridge metrics to facilitate PPCG analyses across all the DAPPs and to provide a link to DoD-wide strategic outcome metrics. Many of the FSCATT program specific metrics are directly comparable to bridge metrics and are included with additional bridge metrics in Table 3.3-7. As shown, FSCATT substantially streamlined its RFP by reducing unique military specifications to zero and by substantially limiting contractor data requirements. These efforts enabled the program to prepare the RFP with substantially reduced workhours. Finally, FSCATT's fixed price contract was competitively awarded without audit and has (to date) not incurred cost/schedule growth.

Table 3.3-7 FSCATT Bridge Metrics

Bridge Metric	Baseline (FSCATT Pre-DAPP)	Realized
Number of Mil Spec/Standards in RFP	56	0
Number of CDRLs in RFP	45	8
RFP Preparation Work Hours	7,316	2678
DCAA Audit Hours	376	275
Proposal Evaluation Time (Workhours)	3,670	2,513
Number of Pages in RFP	276	179
Winning Contractor B&P	*	*
Contract Costs (Estimated vs. Award)	$120 million	$106 million
CAS Work Hours	4,400	5,632
Program Office Staffing	11	8
Contract Cost Variance	Not applicable	0
Contract Schedule Variance	Not applicable	0
Performance Variance	Not applicable	0

* **The contractor has not provided B&P costs to date.**

Based upon reported metrics, the FSCATT program has demonstrated substantial gains in implementing acquisition reform (as evidenced by process metrics) and has realized some early process efficiencies (most notably personnel savings in pre-award activities, an over 35 percent improvement in EMD schedule, and an 34 percent savings in EMD contract award costs). The net effect of acquisition reform on FSCATT total program cost and performance is yet to be fully ascertained; however, metrics and methodologies are in place to ensure a comprehensive analysis.

4. JOINT PRIMARY AIR CRAFT TRAINING SYSTEM (JPATS)

This chapter provides a summary description of the JPATS program, its program management, and the reported results to date, based upon available program and bridge metrics, that were achieved from implementing acquisition reform.

4.1 PROGRAM DESCRIPTION

The JPATS program is a joint (Air Force/Navy) Acquisition Category 1C project to replace the Air Force T-37B and Navy T-34C aircraft and related ground based training systems. In addition to its primary mission of training entry-level student pilots, JPATS will also support undergraduate U.S. Naval Flight Officer Training and U.S. Air Force Navigator Training.

The JPATS contract for the Manufacturing Development (MD) Phase will be awarded following resolution of outstanding protests. It is anticipated that the contract will be awarded with a twenty year period of performance (including production options). The contract value is expected to be approximately $1.3 billion. JPATS incorporates several systems and features that are not available on current Air Force and Navy training systems. Improvements include: missionized ejection seats, improved birdstrike protection, electronic flight instrumentation and digital cockpit display, pressurized cockpit, and flexibility to accommodate a broad range of candidate pilots. A total of 711 aircraft will be produced for the Air Force and Navy with the first operational aircraft delivered in 1999.

JPATS is seeking to maximize the benefits of allowing the prime contractor to operate using commercial practices with its subcontractors and vendors. The program will be conducted using commercial style practices to the greatest extent possible; however, due to the nature of the acquisition strategy, current government acquisition, accounting, auditing and domestic content policies will continue to be applied to the prime.

4.2 PROGRAM MANAGEMENT/ACQUISITION STRATEGY

The Air Force, as the Executive Service for JPATS, manages the program through the Flight Training System Program Director under a joint agreement with the Navy. The Program Director reports to the AFPEO for Bombers, Missiles and Trainers (AFPEO/ST). The Milestone Decision Authority is Air Force Service Acquisition Executive (SAE).

4.3 RESULTS TO DATE

From the beginning of the program, JPATS was structured to take advantage of NDI/commercial practices and, thus, quantitative measures of specific regulatory relief unique to commercial items are difficult to quantify. Therefore, the program initially concentrated on three quantifiable measures: number of program office staff, time to deliver the first production aircraft, and program cost. These measures were refined in coordination with the PPCG to develop JPATS-specific metrics. This section summarizes JPATS program and bridge metrics.

4.3.1 JPATS Metrics

JPATS specific metrics were developed by the JPATS program offices to reflect the unique commercial aspects of the program. JPATS program metrics include:

- Regulatory and statutory relief
- RFP Preparation and Content
- Ground Based Training System
- Program Office Staffing
- Contract Administrative Services
- Program Costs
- Funding Stability
- Earned Value Reporting System
- Contractor Team Composition.

Unfortunately, reporting on the quantitative measures of these metrics is delayed by ongoing protests to GAO. This section defines each of the above metrics and summarizes anticipated program office efforts.

Regulatory and Statutory Relief — The JPATS metric team has compiled a list of statutory and regulatory relief items that are applicable to the program. The team will establish a baseline in terms of cost, schedule, and performance for these statutory and regulatory items

based on their use in the T-1A, T-45 and T-46 (if available) programs. Where no existing baseline can be identified, the team will work with JPATS functional support staff and the contractor to establish a “would cost" projection for individual waivers or groups of waivers. The team will then assess the impact of these waivers on the program. Tables 4.3-1 and 4.3-2 provide the format of the proposed metrics. Data will be available following resolution of the award protest.

Table 4.3-1 JPATS Statutory Relief

Item	Description	Dollars Saved		Time Saved		Performance Delta	
		GOV’T	CONTR	GOV’T	CONTR	GOV’T	CONTR
FAR 52.203-4							
FAR 52.203-5							
FAR 9.4							
FAR 52.209-5							
FAR 52.209-6							
DFARS 209-4							
AFARS 9.4							
DFARS 252.203-7001							
DFARS 203.570							
DFARS 242-72							
DFARS 252.242-7004							
FAR 52.203-7							
DFARS 203.502							
FAR 52.223-5							
FAR 52.223-6							

Table 4.3-2 JPATS Regulatory Relief

Item	Description	Dollars Saved		Time Saved		Performance Delta	
		GOV’T	CONTR	GOV’T	CONTR	GOV’T	CONTR
FAR 52.219-9							
FAR 52.222-1							
FAR 52.229-5							
FAR 52.232-1							
FAR 52.232-2							
FAR 52.232-9							
FAR 52.232-11							
FAR 52.244-1							
FAR 52.245-18							
FAR 52.246-11							
FAR 52.247-1							
FAR 52.247-65							
FAR 52.248-1							
DFARS 252.203-7002							
DFARS 252.208-7000							
DFARS 252.209-7000							
DFARS 252.210-7003							
DFARS 252.234-7000							
DFARS 252.242-7000							
DFARS 252.242-7003							

RFP Preparation and Content — As an early process metric, the JPATS metrics team is comparing the final JPATS RFP with the baseline programs identified in Table 4.3-3. The team is focusing on page count, contract clauses, Mil Spec/Std's, and RFP preparation time. Differences are being noted and are being attributed to acquisition reform where appropriate. This will be a one time measure that reflects progress in streamlining RFP contents.

Table 4.3-3 JPATS RFP Content

RFP	RFP Prep Time	Page Count	RFP/Contract Clauses	Mil-Spec/Stds
JPATS	220,000 hrs	674	262/161	42
T-45	TBD	TBD	TBD	230
T-46	TBD	TBD	TBD	TBD
T-1A	48,000 hrs	TBD	TBD	43

Commercial Acquisition of the Ground Based Training System (GBTS) by the Prime Contractor — The JPATS metric team will task the contractor to compare the post-reform GBTS source selection to a pre-reform acquisition similar to the GBTS effort. This could include a comparison of required clauses, flow-through requirements, possible cost savings, oversight requirements, source selection staffing levels, and schedule and competitive field impacts. DCMC will be asked to review these findings. This will be a one time measure, as shown in Table 4.3-4. The metrics team will also compare the prime contractor's GBTS RFPs to the prime contract, as shown in Table 4.3-5. The team will identify pilot program relief and reform items that were granted to the program office and applied to the prime contract and whether the prime contractor flowed down that relief to the subcontractors. This measurement was taken after receipt of the prime contractor's RFP and will be released following resolution of the protest.

Table 4.3-4 GBTS Acquisition Comparison

Item	Pre-Reform	Post-Reform
Staffing levels		
Required clauses		
Cost savings		
Oversight requirements		
Source Selection staffing levels		
Competitive field impacts		
Schedule impacts		

Table 4.3-5 - Prime vs. Sub GBTS Contract Comparison

Prime Contract Clauses and MIL-SPEC/STD'S	Subcontract Clauses and MIL-SPECs/STDs
	Clauses and Specs Only in Subcontract

Program Office Staffing Support — The JPATS functional support staff will assist the metrics team in determining any staffing level reductions or increases attributable to the pilot program relief and reform items. This will be accomplished by creating a staffing level baseline based on analysis of the program office's "business as usual" functions and processes without the regulatory and statutory relief items. This baseline will be compared to the current relief staffing levels and will encompass the first five fiscal years of the program, as shown in Table 4.3-6.

Table 4.3-6 Annual SPO Staffing Level Comparison

Area	*Pre Reform Levels	Current Reform Levels	Attribute To Pilot Prgm	Relief Item(s) Attributed
Logistics				
Program Mgmt/Test				
Engineering/ Manufacturing				
Financial Mgmt				
Contracts				
Safety				
Total				

*Based on the "Cranston Model" - A program office staffing model for Air Force programs that LTGEN Cranston, former ASC Vice Commander, created in early 90s. Designed to project program office staffing over time - intended as a "glide slope" program offices would follow to meet anticipated staffing decrements. Used as the point of departure for initial JPATS program office staffing. No longer in use.

Contract Administrative Service (CAS) Contract Monitoring Area — DCMC will provide this metric and, after contract award, will obtain a list of all relief and reform items and other pertinent information from JPATS to complete this metric. DCMC will compare the CAS functions on the JPATS contract with the CAS functions in a "business as usual" government acquisition with the same contractor. DCMC will evaluate the impact of the relief

and reform items in terms of cost, workhours, and schedule and provide the results to the JPATS metrics team, in a format similar to Table 4.3-7. The DCMC study has been delayed until the resolution of protests.

Table 4.3-7 Pre vs. Post Reform CAS Functions

CAS Function	Pre Reform			Post Reform		
	Cost	Staffing	Schedule	Cost	Staffing	Schedule

Program Costs — The Cost Analysis Improvement Group (CAIG) has been requested to update the JPATS FY92 Independent Cost Estimate (ICE) to account for program changes since that time. The updated FY 92 ICE, completed under "business as usual" conditions, will then be compared to the ICE developed by the CAIG for the JPATS Milestone II decision. Differences will be reviewed by the metrics team to separate acquisition reform impacts from other factors before measurements are finalized.

Funding stability — This metric compares the DAB approved funding profile and to the funding profile at specific times along the program's life cycle. JPATS financial management will track the funding values quarterly and note any changes from the baseline value, providing justification or rationale as appropriate. The methodology used to track program funds will be similar to that used in the Selected Acquisition Report (SAR). The JPATS program office will report the findings in the format of Table 4.3-8.

Table 4.3-8 Funding Track for JPATS Program

Time Period (Quarters)	Appropriation	DAB	Current	Variance	Cause

Earned Value Reporting System (EVMS) versus meeting traditional C/SCSC — The metrics team will generate an estimate of the costs, time and staffing needed to perform a Demonstration Preview and an Integrated Baseline Review necessary to accept a contractor's C/SCSC system. The team will obtain expert support from JPATS financial managers, Air Force Material Command staff and Defense Contract Management Command analysts. The

team will seek to base the estimate on programs with large production efforts similar to JPATS. This estimate will be compared to the contractor's actual efforts, measured by costs, time and staffing, to arrive at self certification of an Earned Value Management System (EVMS). The efforts of the government and the contractor will be considered in arriving at a baseline estimate and in measuring the actuals, as shown in Table 4.3-9. The team will also look at the C/SCSC reporting requirements versus the actual contractor provided reports.

Table 4.3-9 EVMS vs. C/SCSC Staffing Estimates

C/SCSC Task	Staffing Estimates		EVMS Task	Staffing Estimates	
	GOV'T	CONTR		GOV'T	CONTR
TOTAL			TOTAL		

Contractor Teams — The JPATS metrics team will assist the PPCG and an independent agent in developing and implementing a survey among the JPATS offerors. The survey will seek the contractor's experience in assembling their team of subcontractors and suppliers to identify any change in focus from military to commercial product lines. The team will also assist the PPCG and the independent agent as necessary to establish the specific items of JPATS acquisition reform to be baselined by the survey.

As discussed, the quantitative measures of these JPATS metrics are delayed by the ongoing protest of the JPATS contract award. JPATS has reported a reduction in Statement Of Work pages of over 50 percent and a reduction in development time of 3 months or 12 percent.

4.3.2 Bridge Metrics

Despite the ongoing protest, the JPATS program office is reporting bridge metrics. These reported results, summarized in Table 4.3-10, indicate a substantial reduction in CDRLs, military standards, program office staffing and the size of the RFP. The reported

results also demonstrate the cost of the ongoing protest in terms of government and contractor staffing.

Table 4.3-10 JPATS Bridge Metrics

Bridge Metric	T-1A/T-45 Baseline	JPATS Realized
Number of Mil Spec/Standards in RFP	79	42
Number of CDRLs in RFP	208	81
RFP Preparation Workhours	48,000	220,000
DCAA Audit Hours	12,712	11,706
Proposal Evaluation Time (Workhours)	16,800	190,400
Number of Pages in Proposal	1,217	674
Winning Contractor B&P	$5.4 million	$36.4 million
Contract Cost (Estimated vs. Award)	Pending Protest Resolution	
CAS Work Hours	Pending Protest Resolution	
Program Office Staffing (FTE's)	140	74
Contract Cost Variance	Not Available Pending Protest Resolution	
Contract Schedule Variance	Not Available Pending Protest Resolution	
Performance	Not Available Pending Protest Resolution	

The JPATS reported results to date provide a strong indication of internal government efficiency gains in managing the program and in improved cycle time. Unfortunately, the JPATS RFP preparation work hours, proposal evaluation time and contractor bid and proposal costs have been adversely impacted by a protracted RFP development and by bid protests which continue to delay implementation of the contract.

5. COMMERCIAL DERIVA TIVE ENGINE (CDE)

In this chapter, the CDE program is briefly described, together with its program management/acquisition strategy. Reported results to date from implementing acquisition reform, where available, are also provided.

5.1 PROGRAM DESCRIPTION

The CDE is a two-phased Acquisition Category 1D program. Phase I employs the F-117 engine for the C-17A to demonstrate the advantages of government use of commercial acquisition techniques in the application of derivatives of commercial engines to satisfy military requirements. The F-117 engine is a commercial derivative produced and developed at company expense by United Technologies, Pratt & Whitney Division. The delivery schedule for the engine is driven by the C-17A production schedule. Engine performance is established using a commercial specification that is consistent with the C-17A aircraft performance requirements. Pratt & Whitney also produces spare engines and provides logistics support to the user, Air Mobility Command, under the same government contract used to acquire the engines.

Use of additional standard commercial practices in Phase I would simplify the contract with Pratt & Whitney and assume their continued cooperation with the Government. This is intended to simplify and streamline the contract thereby adding margin against potential reduction in acquisition cost of the engine.

Phase II of the Commercial Derivative Engine Program continues the statutory waiver authority from Phase I for the procurement of commercial derivative engine to support the potential purchase of commercial derivative aircraft to meet future airlift and/or tanker requirements. This phase would also investigate using a commercial derivative engine when engine replacement/upgrades are required on the Air Force's current airlift and tanker fleets which use commercial derivative aircraft like the Boeing 707, Boeing 737, and Douglas DC-10.

5.2 PROGRAM MANAGEMENT/ACQUISITION STRATEGY

The program is managed by the Air Force Program Manager who reports to the C-17A System Program Director and the AFPEO for Tactical and Airlift Programs (AFPEO/TA). The Milestone Decision Authority is USD(A&T).

The F-117 engine was originally selected by the C-17 airframe contractor, McDonnell-Douglas, in the early eighties. (The engine began commercial service in 1984.) Douglas placed their first order in 1987, using commercial agreements and FAA certifications, and, subsequently, purchased the first three lots of engines as contractor furnished equipment.

Douglas developed the aircraft with total system performance responsibility which meant that if the weapon system specification drove any special engine requirements, then Douglas and Pratt & Whitney coordinated all tailoring of the engine specification. Douglas drove engine performance improvements in the form of engine control enhancements, lighter weight, and better fuel economy. Pratt & Whitney undertook all the design and development of the improvements at their expense. They were FAA certified and are part of the common engine specification. The improvements are optional add-ons to the basic PW2000 engine and that is how the Air Force buys them. On the Air Force contract the improvements are referred to as military unique items owing to the source of their design requirements, but they are, in fact, available to all customers. Some commercial customers have opted for some of these features.

From program initiation, the C-17 program plan was to breakout the engine at the end of aircraft development after the engine had demonstrated performance in flight test. The Air Force executed that planned breakout at the end of lot three, in May 1991, and adopted the commercial engine specification versus military specifications and standards. In the fixed price plus EPA contract, the Air Force employed every FAR exception, received waivers to use price as the contract basis, and wrote language to emulate commercial practices to the maximum extent possible. The F-117 engine was nominated as a pilot program in July 1993 by the Under Secretary of Defense (Acquisition and Technology) to “demonstrate the advantages of using derivatives of commercial engines to satisfy military requirements.”

5.3 RESULTS TO DATE

For Phase I of the Commercial Derivative Engine Program, the goal was to demonstrate the advantages of using a commercial engine to satisfy military requirements, and the proposed metrics reflect that goal. The F-117 engine is fulfilling all C-17 mission requirements with substantial savings in manpower and program cost. The Pilot Program nomination package specified measurement of manpower and unit cost. The unit cost evaluation baseline is the commercial pricing model which is used by all engine customers. Price savings will be easy to distinguish if the model changes or any special credits are given

to the Government. To date, no unit cost savings have resulted from recent reform measures. Manpower savings are baselined from a combination of inputs; ASC manpower model, ASC staffing policy, actual manpower allocations to other programs, typical DPRO staffing on similar size programs, and typical man-hours expended by DCAA on similar size programs. Manpower savings are determined by comparing actual allocations to these standards.

To date, a final metrics agreement has not been concluded with the CDE program, although numerous draft agreements have been discussed. Detailed discussions are ongoing and a final agreement is anticipated in 1996. Proposed program specific metrics, that reflect advantages of this commercial engine, are summarized in Table 5.3-1.

Table 5.3-1 Proposed CDE Program Specific Metrics

CDE Metric	Baseline	CDE	Comment
Program Office Size	36 personnel	21 personnel with 50% or more time	Office size in 1993
DPRO Staffing		1 at WPB DPRO	
Development Costs	$900 M	$0	
Production Unit Cost	$4.54 M	$4.54 M	1987 Catalog Price EPA applied at engine delivery
Sustaining Engineering Costs	$40 M per year	$0	
Multiyear Funding	17.6% Discount with Annual Buy	21.9% Discount with Multiyear	Saves $88 M for a seven year multiyear

Table 5.3-1 represents preliminary values which will be further substantiated in FY96. Key aspects of the metrics include:

- **Program Office Size** — The baseline engine team size is typical of an in-production program in the 1993 time frame. During 1993, ASC changed from matrix program support to product teams. Thus, 1993 is a good baseline to evaluate manpower because personnel counting was straightforward, but team sizes reflected previous staffing policies before Reductions In Force took place that year. The F-117 engine team is smaller than the typical team, but only partially due to the commercial contract. The program office did not perform all the typical support functions (Tech Orders, Data, Support Equipment, etc.) and were reduced somewhat by that factor. Those functions were performed by

manpower in the C-17 aircraft SPO with less than 50 percent of their time spent on the engine.

- **DPRO Staffing** — The baseline for this metric will be developed by DCMC for a typical engine program. The CDE program has no production or quality monitoring at the manufacturer. The program employs one DPRO representative in an ACO capacity.

- **Development Costs** — The baseline is the actual amount reported by the contractor to develop the engine up through FAA certification. That amount was validated by comparison to development costs on the TF39 engine on the C-5. The TF39 was certified in 1969 and the F-117 passed FAA testing in 1984. In FY84 dollars, the TF39 development cost was $775 million, whereas P&W invested $900 million in certifying the F-117.

- **Production Unit Cost** — The unit cost shown is the guaranteed contract price for the life of the C-17 program. The Air Force has a Fixed Price plus EPA contract and the actual price of the engine is determined at delivery by a commercially used inflation method. This metric shows there has been no price change due to reform measures, or program changes in quantity and delivery, or any late funding. It also shows there has been no price change for the continued product improvement which benefits all engine users. It is also enlightening to compare prices to other engines. Both the TF39 and the F117 are 40,000 LB Class thrust engines. Using the last price paid for a TF39 engine and the actual F117 contract price, the price per pound of thrust for the TF39 is $118.48 and for the F117 is $118.36. Prices are based on constant FY94 dollars. Thus, the Air Force is paying the same price for the same thrust capability and also getting better fuel economy, better reliability and maintainability, and continuing improvements, and paid no development costs.

As discussed, the CDE clearly demonstrates the advantages of employing commercially available items to fulfill DoD mission requirements. Most notable is the avoidance of $900 million in development costs that would have been incurred to develop a

military-unique engine. In addition, the CDE reports a 40 percent reduction in program office staffing and a projected $88 million in savings due to multiyear procurement. Although a formal metrics agreement has not been definitized, preliminary reported results demonstrate the gains due to commercial acquisition.

6. NON-DEVELOPMENTAL AIRLIFT AIRCRAFT (NDAA)

This chapter provides a summary description of the NDAA program, its program management, and the reported results that were achieved from implementing acquisition reform. The NDAA was initially sponsored by DoD as a commercial supplement or replacement for the C-17 aircraft. As such, the NDAA provided "commercial-style" competition to the C-17; however, the effort was terminated by USD(A&T) at the combined C-17/NDAA milestone decision in November 1995.

6.1 PROGRAM DESCRIPTION

The goal of the NDAA program was to procure, through the use of innovative and streamlined acquisition practices, a non-developmental airlift aircraft that satisfied the requirements of Air Mobility Command. The NDAA program was an Acquisition Category 1D program to provide an alternative to, or a supplement for, the C-17 over a range of aircraft quantities equivalent in cargo capacity to 17 million ton-miles per day. The program was intended to demonstrate the advantages of the use of commercial practices authorized by relief of government acquisition regulations and statutes under the new FAR provisions for commercial item acquisition.

6.2 PROGRAM MANAGEMENT/ACQUISITION STRATEGY

NDAA was managed by the Air Force Program Director who reported to the AFPEO for Tactical and Airlift Programs (AFPEO/TA). The NDAA SPO developed its acquisition strategy based upon extensive discussions with industry and government stakeholders. The program office challenged traditional policies and procedures and took dramatic actions to reform the acquisition process for commercial items purchased as major systems. Key elements of the NDAA commercial acquisition included:

- Military specifications — no military specifications or standards were invoked
- Contract financing — consistent with commercial practices, the NDAA program included calendar milestone payments
- Contract changes — the NDAA effort employed a unique bilateral change clause allowing unilateral contractor own-expense changes

- Contractor data — the NDAA RFP required that the contractor provide the government with access to existing data (vice specific deliverable data requirements)
- Quality standards — the NDAA RFP cited industry developed ISO-9000 (versus MIL-A-9858)
- Warranties — offerors were invited to propose standard commercial warranties
- O&M Concept — the NDAA RFP encouraged offerors to propose a commercial O&M approach; however, a contractor logistics support approach would have been acceptable
- Technical Manuals — the NDAA RFP requested only commercial technical manuals and supplements
- Test and Evaluation — test and evaluation requirements were minimized due to the non-developmental nature of the NDAA. The Air Force intended to rely upon FAA certifications to the maximum extent practicable
- Configuration control was retained by the contractor without restriction.

These key elements enabled the NDAA program to maintain a commercial acquisition approach, even for a major ACAT ID program.

6.3 RESULTS TO DATE

The NDAA program demonstrated standard commercial and industrial practices by insisting that candidate commercial aircraft were to retain their original design heritage. The RFP did not include any military specifications or standards. Only one proposal, from the Boeing Defense and Space Group for minimally modified B-747-400Fs, was received.

Although the Air Force and the DoD recently decided to purchase 80 additional C-17s, in lieu of NDAA aircraft, the NDAA initiative was an important competitive leveraging factor in helping to achieve an affordable C-17 bid from McDonnell Douglas Corp. The competition

intensified the bidding process and caused McDonnell Douglas to make affordability their top priority. As a result, they initiated an aggressive cost reduction and production efficiency improvement program in order to reduce their contract costs. These efforts, in conjunction with an Air Force "should cost" of the C-17 resulted in a $4.4 billion savings on the C-17 program, of which $1.7 billion was directly attributed to the NDAA "competition".[6]

Table 6.3-1 compares the NDAA acquisition approach to a typical airlift aircraft procurement. NDAA contract administration cost avoidance due to the reduced number of government-unique clauses over traditional DoD practices was estimated to be 18-30 percent.

Table 6.3-1 NDAA Acquisition Versus Typical Aircraft

Metric	Traditional Aircraft	NDAA Realized
Logistics Support Analysis	Required	Not Required
Technical Manuals & Supplements	Mil Spec/Stds	Commercial
Defense FAR Supplement (DFARS) Clauses	Required	211 Substituted
Cost Data Management/Reporting	Required	Not Required
Serialized Control of Spares	Required	Limited to Engines
Government-Approved Accountability of Government-Furnished Property	Required	Not Required (No GFP)
Cost Avoidance From Reduced Number of Government-Unique Clauses	Baseline	Projected 18-30 Percent of Contract Administration
Documentation and Review Requirements per DoD Instruction 5000.2, for Milestones O, I, & II	Required	Waived
Program Office Size	150	32
Military Specifications/Standards	350	0
CDRL's	400	10 (Access to contractor data)
RFP Pages	1,000	175

As shown in Table 6.3-1, the NDAA realized significant gains in implementing acquisition reform and streamlining. Although not approved for production, the NDAA served as "commercial competition" to the C-17 and directly contributed to a $4.4 billion savings. Furthermore, the NDAA served as a trailblazer in several areas, including:

- 63 RFP clauses deleted due to FASA

[6] The C-17 also is projecting an additional savings of $896 million due to multiyear contracting.

- Reduced RFP page count to 175 pages (2 model contracts, 2 statements of work, 1 specification, all CDRLs)
- 17 CDRLs (10 on aircraft contract; 7 on contractor logistics support contract)
- No certified cost/pricing data
- No unilateral changes clause
- No MILSPECS / MILSTDS
- No government furnished property
- No unilateral changes clause
- No military quality requirements / inspections
- No military configuration control
- No Support Equipment Requirements Data (SERD)
- No serialized control of spare parts
- No military format technical orders / flight manuals
- No military defined support system.

Many of these accomplishments are now being institutionalized throughout DoD with broader FASA ‘94 implementation.

7. DEFENSE PERSONNEL SUPPORT CENTER (DPSC)

This chapter provides a summary description of DPSC and its New Business Strategies Demonstration Program (NBSD). DPSC was designated as a regulatory DAPP by USD(A&T) to facilitate further expansion of the NBSD initiative and to assist DPSC in moving towards becoming a world-class buyer. Therefore, this chapter also provides DPSC reported results to date, in terms of program specific metrics.

7.1 PROGRAM DESCRIPTION

DPSC purchases medical, subsistence, and clothing and textile items for members of the Military Services and their dependents world-wide. Therefore, many of the items purchased by DPSC are either commercial market products or have commercial market substitutes. Unlike commercial wholesalers, DPSC's mission is to provide food, medical, and clothing items to support both military and humanitarian operations at a moment's notice. To fulfill this mission in today’s rapid response environment, DPSC has evolved, through reengineering and regulatory relief, into a leaner, more efficient, and more responsive agency. Today, DPSC purchases commercial products manufactured in response to actual demand and delivered direct to the customer, thus eliminating inventory and reducing lead times.

7.2 PROGRAM MANAGEMENT/ACQUISITION STRATEGY

DPSC is managed by the DPSC program manager within the Defense Logistics Agency. The program procures commercial items through electronic commerce/electronic data interchange. The NBSD is an ongoing initiative of DPSC that is intended to demonstrate innovative means of overcoming barriers to buying commercial items and technologies. NBSD is also intended to implement initiatives that will permit DPSC to more closely emulate competitive commercial business systems. The NBSD Program, which has been in operation since January 1992, is focused on streamlining practices and procedures within existing regulations and statutes. DPSC's designation as a regulatory DAPP is a natural progression of their NBSD.

Continued participation as a regulatory DAPP allows evaluation of regulatory relief in 1995 and subsequent statutory relief provided commercial item acquisition by FASA, effective December 1, 1995. Thus, participation in the DoD Pilot Program allowed DPSC to undertake further demonstrations of efficiencies and benefits that could result from regulatory

and statutory waivers. To focus the DPSC DAPP, categories of products were selected for participation in Phase I of the pilot program, covering approximately 50,000 items (about 40 percent of total items) with projected one-year purchases of $280 million (about 11 percent of total FY93 purchases). These items were chosen because they are considered the best targets of opportunity to test the objectives of the regulatory pilot program.

To establish appropriate comparative baselines, DPSC and the PPCG jointly evolved a "market basket" approach that encompassed items that were procured independently from other ongoing DPSC initiatives. This approach provides a pure sample set that isolates strictly regulatory relief. DPSC identified the June 1994 procurements as such a set which included 63 solicitations: 8 in clothing and textile; 15 in medical; and 40 in subsistence. The June 1994 baseline then is compared against post-relief results to ascertain the potential impact of regulatory relief.

7.3 RESULTS TO DATE

Metrics for DPSC were carefully crafted to isolate the net effect of regulatory relief and to segregate those effects, where possible, from the ongoing NBSD. Specific metrics include:

- Regulatory Relief
- New Suppliers
- Dual Use Production Facilities
- Price to the Customer
- CAS Workhours
- Clothing and Textile Quality Assurance
- Inventory Reduction.

These metrics and DPSC reported results to date are discussed below. DPSC is not reporting bridge metrics due to the commercial consumable nature of the items procured.

Regulatory Relief — DPSC was granted relief from eight specific regulatory requirements as an integral component of its designation as a regulatory DAPP.[7] The intent of this metric is to capture the effect of that relief and to document appropriate actions to further facilitate DPSC's transition to a world class buyer. Each specific regulatory waiver and DPSC reported results to date are summarized below:

- **The Commander, DPSC, was granted the authority over specification decisions, provided that coordination with the customer and technical advisors is accomplished to ensure that the customer's needs are being satisfied** — The DPSC Commander was not required to exercise this authority during the reporting period. The movement of the specification preparing activity (NATICK) to the Defense Business Operating Fund (DBOF) during this period resulted in NATICK becoming more customer oriented. DPSC's efforts to employ more commercial specifications met with far less resistance from the specification preparing activity than in the past. Had NATICK not come under DBOF during this period, DPSC contends that there would have been greater need and use of this authority.

- **The Director, Defense Logistics Agency (DLA), was encouraged to delegate his authority to waive submission of certified cost or pricing data provided by FAR 15.804 -3(1) to the Commander, DPSC, in order to reduce administrative lead time for processing any waiver requests** — The Director, DLA, did not delegate this authority to the Commander, DPSC. As a result, DPSC reports no impact.

- **The use of Shared Production Agreements (SPAs) in lieu of the flowdown provisions of rated orders discussed in FAR 12.303(d)(2) was authorized** — DPSC reports a slight increase in

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[7] Citing a USD(A&T) 15 December 1994 Memorandum entitled "Defense Acquisition Pilot Programs Designation and Regulatory Relief," Tab D of the PPCG Interim Report, Fall, 1994, mistakenly ascribed additional DPSC regulatory relief, granted by USD(A&T).

the use of Shared Production Agreements; however, no contingency operations occurred during the reporting period that would enable an assessment of the impact of this authority. Based on the results of random tests of the surge provisions of the SPAs, DPSC contends that the SPA is a more viable solution to ensuring a warm industrial base than is the use of rated orders.

- **The requirement in FAR 3.103-1 to insert the provision at FAR 52.203-2, Certification of Independent Price Determination, was waived** — DPSC reports that this provision is contained on a four page preprinted DPSC solicitation/contract overprint with 13 other provisions requiring certifications and representations. The elimination of this clause from the overprint had no impact on the number of solicitation pages. Elimination of 1 out of 14 provisions had minimal impact on the time required by contractors to respond to the solicitation and for contracting officers to evaluate the response. DPSC suggests that without corresponding statutory waivers of some or all of the other 13 provisions, there is negligible impact resulting from this waiver.

- **The requirements in FAR 14.201-2 and 15.406-2 mandating the use of the SF 1447 Solicitation/Contract form were waived. DPSC was granted the authority to use the DPSC Form 5104 instead** — DPSC requested this waiver as part of a series of waivers that would result in more streamlined solicitation and contextual documents in order to attract those sources in the commercial marketplace who view DPSC requirements as unnecessarily voluminous and burdensome. The DPSC Form 5104 was designed as the cover page for a proposed DPSC commercial solicitation that would eliminate the regulatory verbiage and replace it with a limited number of core, "plain English" terms and conditions that emulate commercial business practice. Unfortunately, use of the proposed solicitation, except for the cover sheet, was not approved. Use of the DPSC form is a step forward; however, little impact is anticipated without fundamental changes to the solicitation and contractual documents.

- **Contracting officers were authorized to permit contractors to use Government supply sources in performing new Government fixed-price contracts through waiver of the limitations in FAR 51.101.** — DPSC reports that this waiver was not exercised during FY95. Outstanding issues in the areas of inspection/acceptance and government furnished material (GFM) must be addressed before exercising this waiver. An analysis of needs and requirements is ongoing and DPSC expects to exercise this waiver in FY 96.

- **The use of DD Form 250, Material Inspection and Receiving Report as required by DFARS 246.670 and 252.246-7000 was waived. The use of the ANSI X12 861 Receiving Advice transaction set was authorized in its place for all contracts and/or orders for commercial items that were processed electronically provided that the X12 transaction set served all intended quality assurance, receipt and acceptance functions currently performed by the DD 250 and that the information contained in the X12 transaction set could be manually read until an interface is developed for all permanent systems —** DPSC reports minimal use of this waiver due to a general lack of technical sophistication by their customers and the Defense Finance and Accounting Service (DFAS). Electronic receipts were processed for some DPSC electronic commerce programs such as Prime Vendor and Quick Response; however, none of the solicitations in the measurement universe were included in the Electronic Commerce Programs.

- **DPSC was granted relief from the $25,000 ceiling on the use of fast payment procedures in accordance with FAR Subpart 13.3 for clothing purchases under the Pilot Programs. The USD(A&T) raised the ceiling on fast payment procedures to $500,000 per order provided that the remainder of the requirements for use of fast payment procedures were complied with** — DPSC applied this waiver to an American Apparel clothing contract which was for a one year base period

with two one-year options. The first delivery order was issued against the contract on 12 Feb. 1993, prior to the waiver. From that time until the end of calendar year 1993, $11,178,031.82 in orders were placed against the contract. A balance of $2,553,086.14 in late payments remained outstanding with a total of $26,482.79 in interest due the contractor. DPSC measurement of the waiver began with delivery orders issued 25 Feb. 1994 and ended on 18 Oct. 1994. Over the period, $12,484,770.42 in orders were issued against the American Apparel contract. Assuming the same percentage of payments delinquent as prior to receipt of the waiver and that all other conditions remain the same, from $0 to $2,846,527 in late payments would have occurred during this period. Applying interest penalties at the then averaged interest rate of .0625, approximately from $0 to $177,908 in interest would have been paid to the contractor. Projecting beyond the measurement period to the contract period, from 25 Feb. 94 to 12 Sep. 95, $27,730,801 in orders were issued. Assuming the same percentage of payments delinquent as prior to receipt of the waiver and that all other conditions remain the same, from $0 to $6,322,623 in late payments would have occurred during this period. Applying interest penalties at an averaged interest rate of .0675, approximately from $0 to $426,777 in interest would have been paid to the contractor.

New Suppliers — One of the key objectives of the DPSC DAPP program is greater civil-military integration, including expanding the participation of new suppliers in competition for Government business. Table 7.3-1 presents the average number of competitors for items in the baseline market basket by commodity group in June 1994 (baseline) and in FY95. As shown, the average number of offerors increased in the subsistence and medical areas, but decreased slightly in the clothing and textile areas.

Table 7.3-1 DPSC Average Number of Competitors

Commodity Group	June 94	FY95
Subsistence	2.7	4.2
Medical	1.3	2.0
Clothing/Textile	2.8	2.4

Dual Use Production Facilities — Another key measure of civil/military integration is the extent to which dual use production facilities are employed to meet both market's demands. To date, DPSC has not reported on this metric.

Price to the Customer — If statutes and regulations are as burdensome as claimed, than there should be an overall cost decrease if the requirements are waived. To set up the comparison, DPSC employed a "market basket" sample of items from those in Phase 1 of the Pilot Program. Average prices to customers (item price plus defense business operations fund (DBOF) surcharges for DPSC operating costs) were collected for those items from the past year. This provides a baseline to track against during the Pilot Program. The regulatory relief is considered successful if there is an overall reduction in cost of items delivered to customers.

DPSC reported "price to the customer" data on 35 items for June 94 and FY95. These data, summarized in Table 7.3-2, indicate erratic movement in the price to the customer across all reported commodity groups. This erratic movement is indicative of the numerous variables (market pressure, DBOF reallocations, inflation, etc.) that can affect "price to the customer" and that are unrelated to acquisition reform.

Table 7.3-2 DPSC Reported Price to the Customer

Commodity	Number of Items			
	Total	Price Increase	Price Decrease	No Change
Subsistence	13	8	3	2
Medical	8	6	2	0
Clothing/Textile	14	6	7	1

The PPCG, in conjunction with DPSC, will continue to refine and assess the reported data in an effort to segregate and identify regulatory related effects. This effort will be expanded to the FY96 data, which will incorporate the potential effect of broader commercial practices consistent with FASA '94.

CAS Workhours — The intent of this metric was to capture the effect of regulatory relief on contract administration services (CAS) hours incurred by both DCMC and FDA (in the case of medical and subsistence items). This metric encompasses numerous complex issues (such as the relationship between DoD waivers and FDA oversight) which are still being assessed by DPSC. Therefore, DPSC did not report any empirical results in FY95.

Clothing and Textile Quality Assurance — Application of defense-related quality assurance requirements is limited within DPSC to the clothing and textile area. The intent of

this metric was to assess the effect of regulatory relief on government quality assurance work hours as incurred by DCMC. The metric involves the number of hours incurred on 5 previous contracts with the number of hours incurred on 5 contracts that included regulatory relief. DPSC has selected the representative contracts; however, empirical results have not been reported to date.

Inventory Reduction — A key component in the overall cost of the DoD supply system is the cost to hold inventory in the depots. Direct vendor deliveries and other innovative initiatives should reduce the amount of inventory needed to be held to support the Military Services. DPSC expected to attract additional suppliers to these types of arrangements through the relief granted by the DAPP. Inventory reductions were to be measured by the impact on safety levels (amount needed to be held in inventory based on usage rates and production lead-times from contractors). Cost savings were to be estimated by the asset value factored by the difference in safety levels reduced or eliminated.

DPSC realized inventory reductions for medical items and subsistence are summarized in Figure 7.3-1. As shown, DPSC has achieved substantial inventory reductions since FY91; however, the relationship of those reduction to acquisition reform is not clear. Furthermore, the relationship between the inventory reduction and the NBSD (versus inventory draw-downs driven by the overall defense drawdown) cannot be ascertained.

Figure 7.3-1 DPSC Inventories

As discussed, the regulatory relief that was provided to DPSC in 1995 was insufficient to enable the program to fully employ best commercial practices. As such, the

reported empirical results are erratic and, at times, inconsistent. The effect of the greater regulatory relief provided to DPSC as part of FASA '94 should be evident during 1996. The 1996 results are, therefore, expected to be more consistent and dramatic.

8. HERCULES (C-130J)

The Hercules C-130J aircraft program was recently designated as a regulatory DAPP by USD(A&T) on 19 September, 1995. As such, the C-130J serves as the first major procurement that can draw upon the revised commercial practices (contained in the new FAR Part 12) that were implemented as a result of FASA '94. This chapter briefly summarizes the C-130J program and its acquisition strategy. Initial program activities and results to date are also highlighted. More detailed results are expected to be reported through 1996, as the program matures to contract award and execution.

8.1 PROGRAM DESCRIPTION

The C-130J is a modification of the C-130H, undertaken by Lockheed Martin at company expense, with intended sales to the United Kingdom, Australia, and the United States. As such, the Air Force's pending procurement of the C-130J falls within the guidelines of FAR Part 12, Commercial Item Acquisition. The C-130J modification involves a two-crew member flight system, upgraded Allison AE 2100D3 engines, enhanced performance, and improved reliability and maintainability.

8.2 PROGRAM MANAGEMENT/ACQUISITION STRATEGY

The C-130J procurement is managed by the Air Force C-130 System Program Director (SPD). The procurement is an ACAT IC Program, Phase IV with a Milestone Decision Authority of SAF/AQ. The system will be procured from Lockheed Martin (Marietta, Georgia) via a firm fixed price contract with five years of annual priced options. As a regulatory DAPP, the C-130J is intended to demonstrate the application of commercial practices to major system acquisition. Key commercial elements of the C-130J acquisition strategy include:

- The Government will require Lockheed Martin to complete as much of the aircraft testing (including USAF military unique testing requirements) as feasible, before the Government accepts the first C-130J aircraft. The Federal Aviation Administration's (FAA's) representatives will monitor the Lockheed Martin test program

- Configuration management, quality assurance, and production management will be achieved by Lockheed Martin, using commercial acquisition management approaches. The contracting documents will require minimal use of military specifications or standards. In some instances, Lockheed Martin plans to continue the use of specific military specifications/standards, because they represent best practices; however, Lockheed Martin will phase out all military standards as specific commercial standards are established

- The C-130J Maintenance Concept will plan for full organic and depot maintenance capabilities at a later date. Initially, the C-130J aircraft will be supported by interim contractor support until the Air Force becomes fully organic (approximately FY002). The Air Force intends to use commercial payments for the C-130J acquisition.

Based upon the above acquisition strategy, program metrics will be developed by the C-130 SPO, in coordination with the PPCG, during 1996. At this juncture, preliminary program results related to process measures are provided based upon program maturity to date.

8.3 RESULTS TO DATE

As discussed above, the C-130J Hercules acquisition encompasses several key aspects of commercial acquisition practices. Program metrics that reflect those aspects will be fully developed in 1996. This section summarizes reported results to date based upon interim program metrics and bridge metrics.

8.3.1 Interim Metrics

Table 8.3-1 provides preliminary metrics for the C-130J. These interim metrics were offered by the program manager in advance of a formal Metrics Agreement and are subject to change and updating.

Table 8.3-1 C-130J Interim Metrics

Interim Metric	Baseline (C-130H)	Interim Metric
Number of Pages in Proposal	983	392
Number of Pages in Contract*	207	155

* **Commercial Format Model Contract** - in response to FAR Part 12

8.3.2 Bridge Metrics

Even though the C-130J is a relatively new program, the C-130 SPO began reporting bridge metrics in December 1995. This timely submittal enables evaluation of process results for the C-130J, as presented in Table 8.3-2.

Table 8.3-2 C-130J Bridge Metrics

Bridge Metric	Baseline(C-130H)	Realized
Number of Mil Spec/Standards in RFP	TBD	8
Number of CDRLs in RFP	118	43
RFP Preparation Workhours	TBD	6720
DCAA Audit Hours	218	114
Proposal Evaluation Time (Workhours)	TBD	TBD
Number of Pages in RFP	224	413
Winning Contractor B&P	18.9 Workyears	0
Contract Costs (Estimated vs. Award)	$41.6M	TBD
CAS Workhours	12.75 Workyears/year	TBD
Program Office Staffing (FTEs)	30	21
Contract Cost Variance	Not Applicable	Not Applicable
Contract Schedule Variance	TBD	TBD
Performance 1	158' Total System Error Airdrop Accuracy	TBD
Performance 2	1.2 Hours Mean Time Between Maintenance	TBD

As shown, the C-130J has realized a 30 percent reduction in program office staff, a 50 percent reduction in contract data requirements, and an 85 percent reduction mandatory military standards. These results are particularly dramatic considering that the baseline is the C-130H which was procured via traditional DoD acquisition methods.

9. SUMMARY

The Defense Acquisition Pilot Programs were designated by the Undersecretary of Defense (Acquisition and Technology) to serve as vanguards in demonstrating new and innovative commercial acquisition approaches. The statutory and regulatory relief that was provided to the DAPPs emancipated program office personnel from their regulatory chains and, subsequently, unleashed creative innovation in several promising areas including:

- The JDAM "Rolling Downselect" and emphasis on managing commercial subsystems and components with limited government-unique oversight
- The FSCATT fixed-price development effort coupled with "commercial-style" milestone billing
- JPATS reliance on a contractor earned value reporting system (versus the traditional CSCS/C)
- NDAA's use of FAA certification, access to contractor data (versus government-unique CDRLs) and adoption of ISO-9000 (versus MIL-Q-9858)
- CDE's use of a commercially available engine to meet military needs and "commercial-style" logistics support included within the acquisition contract.

These and other innovative techniques coupled with effective acquisition and oversight streamlining (limited cost/pricing data and material management accounting system requirements, reduced specifications and standards, streamlined RFPs and reduced CDRLs) enable the DAPPs to report promising gains in in-house efficiencies, estimated reductions in contract prices, and improved cycle times. Specific examples include:

- An 84 percent reduction in contract administrative services to date and a projected 50 percent reduction in unit production cost for JDAM
- An estimated 13.5 percent overall contract cost reduction and a projected 33 percent reduction in the EMD contract schedule for FSCATT

- A 50 percent reduction in program office staffing and a 40 percent reduction in contract data requirements for JPATS
- A 25 to 50 percent reduction in proposal preparation costs and an estimated 18 to 30 percent cost avoidance in contract administrative costs for NDAA
- A 40 percent reduction in program office staffing and a projected $88 million savings due to multiyear for the CDE.

These reported results (as well as others documented throughout this report) clearly demonstrate that commercial acquisition practices can be applied across a wide variety of defense programs (from major weapons to commodity buys). Furthermore, application of those practices appears to reduce in-house and contract costs, while simultaneously reducing development and procurement cycle times.

These reported results far exceed the benefits of more constrained "acquisition streamlining" within the traditional DoD process (the best of which is exemplified by the NTH) and clearly illustrate the gains to be achieved by broader and more rapid adoption of commercial acquisition practices. These results, although promising, are tempered by the realization that all of the DAPPs have yet to deliver end-item hardware, and, therefore the effect of acquisition reform on end-item performance cannot yet be assessed. This area is a particular focus of the PPCG during 1996, when approved metrics are in place.